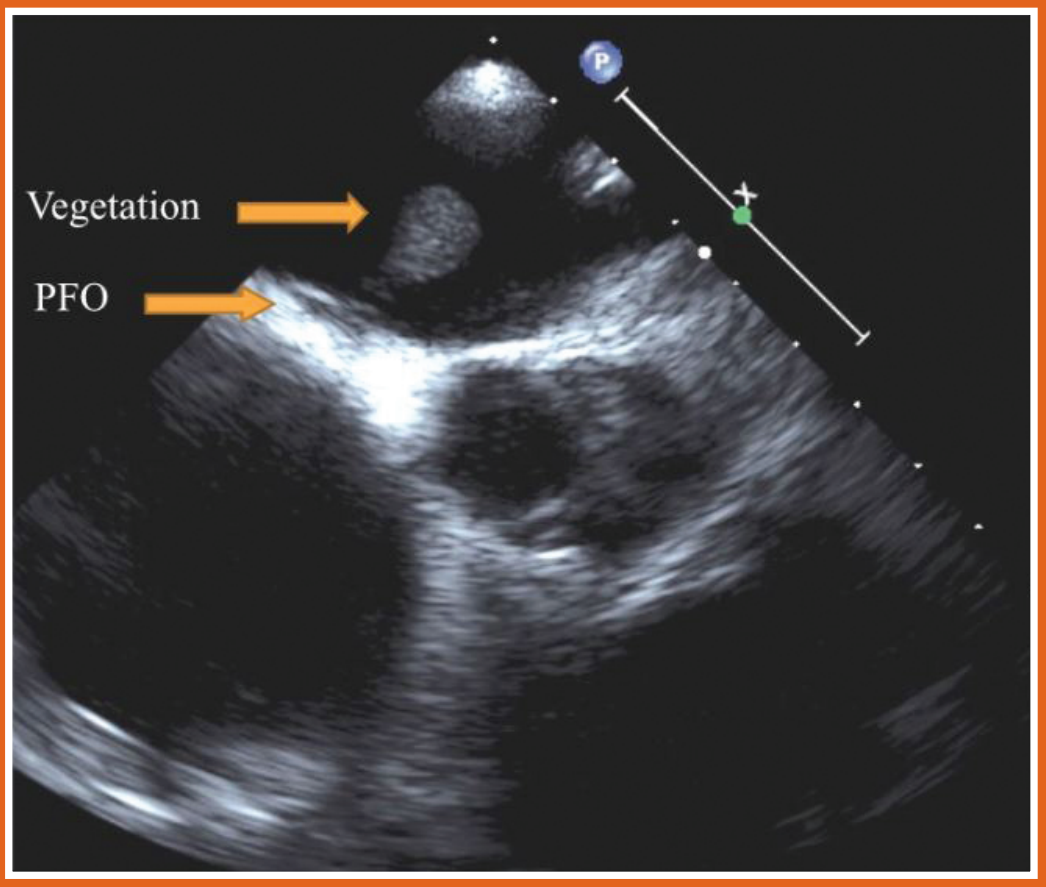
THE 27TH ANNUAL DR. GEORGE PEREZ
RESEARCH COLLOQUIUM

ABSTRACTS OF PRESENTATIONS

PRESENTED IN CONJUNCTION WITH THE
SETON HALL UNIVERSITY PETERSHEIM ACADEMIC EXPOSITION

22 APRIL 2016



SCHOOL OF HEALTH AND MEDICAL SCIENCES
SETON HALL UNIVERSITY

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22 April 2016

Dear Colleagues and Students:

It is my distinct pleasure to greet you as you attend the 27th Annual Dr. George Perez Research Colloquium of the School of Health and Medical Sciences.

Since 1990, the Research Colloquium has been the vehicle for our faculty, residents, fellows and health sciences students to present the results of the scholarly pursuits in which they have been engaged. We also enjoy the participation of some of the medical students at the healthcare institutions that comprise our graduate medical education consortium. For this year's Research Colloquium, we once again welcome our partner in the realm of academic medicine, Hackensack University Medical Center, as well as our colleagues from the Seton Hall College of Arts and Sciences.

We are privileged to have as our keynote speaker the Founding Dean of the nascent Seton Hall-Hackensack School of Medicine, Bonita Stanton, MD. Prior to her appointment at Seton Hall, Dr. Stanton served as Vice Dean for Research at Wayne State University School of Medicine. Her biography can be found on page VII. Dr. Stanton's career, which also includes spending five years on assignments in Bangladesh, has been focused on improving the health of under-represented minorities and disenfranchised populations. Today, Dr. Stanton will present a lecture titled "A ground-level view of 25 years of HIV prevention efforts among children and adolescents around the globe."

Once again our program is being sponsored by MDAdvantage Insurance Company of New Jersey, a leading provider of medical professional liability insurance in New Jersey. As a company committed to investing in the future of New Jersey's healthcare system, MDAdvantage has been an ongoing partner in supporting medical education and encouraging the medical students, residents and young physicians of our state to realize their greatest potential.

Finally, I would like to take this opportunity to thank my fellow faculty members who assisted in the preparation for today's event. I would also be remiss if I didn't recognize the many individuals from Seton Hall's administrative staff, especially our Director of Public Relations, Marketing and Special Events, Lori Riley, MA, for making the Perez Research Colloquium a success.

Most of all, however, I thank the presenters and their co-authors for sharing the results of their studies with us.

Have a wonderful and productive day.

Collegially yours,

Vincent A. DeBari, PhD
Professor of Medicine and Director of Research

School of Health and Medical Sciences
400 South Orange Avenue • South Orange, New Jersey 07079

A HOME FOR THE MIND, THE HEART AND THE SPIRIT

SETON HALL UNIVERSITY
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22 April 2016

Dear Colleagues and Students:

Welcome to the School of Health and Medical Sciences' (SHMS) 27th Annual Dr. George Perez Research Colloquium, presented in conjunction with the Seton Hall University Petersheim Academic Exposition.

Each year, the Perez Research Colloquium is a showcase of the leading research by the medical faculty, residents and fellows from the SHMS Division of Medical Residencies and Fellowships, as well as faculty and students from our Division of Health Sciences. Students and faculty from the University's Department of Chemistry and Biochemistry also have been regular participants, and we are pleased to welcome back our colleagues from Hackensack University Health Network. This year, we also add a body of work from another one of our new partners, Englewood Hospital and Medical Center.

As SHMS and Seton Hall continue to grow and thrive, it is fitting that we celebrate our future by incorporating the new Seton Hall-Hackensack School of Medicine into our Perez Research Colloquium. We warmly welcome Founding Dean Bonita Stanton, MD, to this special event. We are so pleased that she is now a part of the University community. Dr. Stanton's keynote presentation today will highlight her own research in HIV prevention — I encourage you to join us for this discussion, which is an opportunity to get to know Dr. Stanton as a leader and a scholar.

On behalf of all Colloquium participants, I would like to thank Vincent DeBari, PhD, Professor of Medicine and SHMS Director of Research, for his ongoing leadership of this marquee program. I also would like to thank the Petersheim Steering Committee, led by co-chairs Jose Lopez, PhD, Associate Professor of Physics, and Sulie Chang, PhD, Professor of Biological Sciences, for welcoming our continued participation in the Petersheim Academic Exposition.

Thank you to all the presenters and attendees who have come together to make today possible. Our interprofessional perspectives unite to create such a worthwhile scholarly conversation.

Cordially,

Brian B. Shulman, PhD, CCC-SLP, ASHA Fellow, BCS-CL, FASAHP
Dean, School of Health and Medical Sciences
Professor of Speech-Language Pathology
and
Professor of Pediatrics
Seton Hall-Hackensack School of Medicine

School of Health and Medical Sciences
400 South Orange Avenue • South Orange, New Jersey 07079

A HOME FOR THE MIND, THE HEART AND THE SPIRIT

SCHEDULE

Programs will take place within the Richie Regan Recreation Center
Seton Hall University, South Orange Campus

7:30 a.m. – 8 a.m. ..... Registration and Continental Breakfast

Posters must be on display by 8:00 a.m. and remain posted until 12:30 p.m.

Location: Field House

8 a.m. – 12:30 p.m. ..... Poster Session

Basic Medical Sciences (BMS)

Clinical Investigations (CI)

Systematic Reviews (SR)

Clinical Vignettes (CV)

Health Sciences Research (HSR)

Research in Progress (IP)

Location: Field House

10:30 a.m. – 11:30 a.m. ..... Invited Speaker

Bonita Stanton, MD – Founding Dean, Seton Hall-Hackensack School of Medicine

"A ground-level view of 25 years of HIV prevention efforts among children and adolescents around the globe"

Location: Walsh Gymnasium

11:30 a.m. ..... Light Refreshments

Location: Field House

12:30 p.m. ..... Poster Session Concludes

All posters must be removed at 12:30 p.m.

Location: Field House

INVITED SPEAKER

10:30 a.m.
Walsh Gymnasium

"A Ground-level View of 25 Years of HIV Prevention Efforts among Children and Adolescents around the Globe"

Description:

- HIV Context: Then and now
- HIV Intervention Development: Creating the portfolio of prevention interventions
- HIV Intervention Assessment: Assessing the intervention portfolio
- HIV Intervention Utilization: Bringing evidence-based interventions (EBIs) to the community
- Implementation of EBIs: It's all about implementation

Bonita Stanton, MD

Founding Dean
Seton Hall-Hackensack School of Medicine

About the Speaker:

Dr. Stanton was appointed Founding Dean of the Seton Hall-Hackensack School of Medicine in March 2016. The creation of the medical school is a partnership between Seton Hall University and Hackensack University Health Network, and the school is projected to begin enrolling its first class of medical students in fall 2018.

Dr. Stanton is a graduate of Wellesley College and Yale University School of Medicine. She completed her pediatric residency at Rainbow Babies and Children's Hospital (Case Western Reserve) and her Pediatric Infectious Disease Fellowship training at Yale University School of Medicine.

For the past four years, Dr. Stanton served as Vice Dean for Research at Wayne State University School of Medicine. For 12 years, she served as the Chair of Pediatrics at West Virginia University (1999–2002) and at Wayne State University (2002–2011). Previously, she had been on the faculty of the University of Maryland's School of Medicine as Division Chief of General Pediatrics. Prior to that, she lived and worked in Bangladesh for five years, where she served as a health consultant to the World Bank and a research scientist for the International Center for Diarrheal Diseases Research.

Dr. Stanton's career has been focused on improving the health of under-represented minorities and disenfranchised populations. She has consulted for numerous national and international groups, including the World Bank, Centers for Disease Control (CDC), World Health Organization (WHO), United Nations Children's Fund (UNICEF) and the U.S. Agency for International Development (USAID) on issues related to urban health, HIV/AIDS transmission in youth, maternal-child health, vaccines and health services research. She is the author of more than 300 peer-reviewed articles and has served as an editor of the *Nelson Textbook of Pediatrics*.

ON THE COVER:

Echocardiogram of a vegetation in the patent foramen ovale of a 57 year old male taken by K. Gala, MD. See Abstract CV02 by I. Acharya, I., *et al.*

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ABOUT

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Basic Medical Sciences

BMS01

Modified nerve-muscle-endplate band grafting technique for muscle reinnervation

Mu L. (senior scientist); Sobotka, S.; Chen, J.; Nyirenda, T.
Hackensack University Health Network

INTRODUCTION: Restoration of useful function after peripheral nerve injury is a major challenge for reconstructive surgery and rehabilitation medicine. Our objective was to describe our modified nerve-muscle-endplate band grafting (NMEG) procedure and document functional recovery and nerve regeneration.

METHODS: Muscle reinnervation with modified NMEG technique was studied in the rat model to test our hypothesis that optimal functional recovery could be obtained by transplanting a NMEG pedicle harvested from a neighbor healthy and undamaged donor muscle to the native motor zone (NMZ) of the target muscle. In the present study, the NMEG pedicle was harvested from the sternohyoid muscle and transplanted into the NMZ within the ipsilateral experimentally denervated sternomastoid muscle. A NMEG contained a muscle block, a nerve branch with nerve terminals, and a motor endplate band with numerous neuromuscular junctions. The extent of functional recovery and nerve regeneration was evaluated using maximal tetanic force measurement and various nerve staining methods.

RESULTS: At 3 months after surgery, the mean muscle force of the reinnervated muscles was measured to be 82% of the control. Extensive axonal regeneration was identified in the reinnervated muscles. The results from this study demonstrated that the NMEG-NMZ technique resulted in better functional recovery as compared to our originaly designed NMEG procedure (67% of the control), in which a NMEG was implanted into an endplate-free area in the target muscle.

CONCLUSION: The NMEG-NMZ yielded excellent muscle force recovery of the reinnervated muscles. Our results suggest that the NMZ of the target muscle is the best site for NMEG implantation to obtain optimal muscle reinnervation and functional outcomes.

BMS02

Applications of B7H6 ligands in cancer-based immunotherapy

Phillips, M. (student); Sabatino, D.; Bitsaktsis, C. Seton Hall University, Dept. of Chemistry & Biochemistry

INTRODUCTION: B7H6 is a cellular membrane protein expressed only on tumor cells, and it has been proven to be a specific ligand of the NKp30 receptor.

METHODS: Surface plasmon resonance (SPR) and crystal structure analyses revealed that B7H6 binds to NKp30 (KD = 1.0 ± 0.2 x10-6 M) in a 1:1 ligand-receptor stoichiometry through predominantly stable hydrophobic, H-bonding and salt bridge interactions. NKp30 is a member of the natural cytotoxicity receptors (NCRs) and upon activation is a key mediator of the NK cell antitumor immune response through the release pro-inflammatory cytokines and chemokines, and cytotoxic agents that lead to tumor cell death.

RESULTS: B7H6 is a cellular membrane protein expressed only on tumor cells, and it has been proven to be a specific ligand of the NKp30 receptor. Surface plasmon resonance (SPR) and crystal structure analyses revealed that B7H6 binds to NKp30 (KD = 1.0 ± 0.2 x10-6 M) in a 1:1 ligand-receptor stoichiometry through predominantly stable hydrophobic, H-bonding and salt bridge interactions. NKp30 is a member of the natural cytotoxicity receptors (NCRs) and upon activation is a key mediator of the NK cell antitumor immune response through the release pro-inflammatory cytokines and chemokines, and cytotoxic agents that lead to tumor cell death. Chemical cross-linking studies followed by tryptic digestion, tandem mass spectrometry and proteomic analyses of the leukemia cell line K562 with soluble NKp30-Fc fusion protein revealed that binding of B7H6 to NKp30 triggers association of NKp30 to an ITAM bearing protein. This activates a signaling cascade that results in the reorganization of the NK cells' cytoskeleton and initiation of Ca2+ flux that ultimately leads to the secretion of inflammatory cytokines. Thus, the discovery of the B7H6-NKp30 binding interaction offers an opportunity in the development of novel ligands capable of eliciting immune responses that may be applicable to tumor immunotherapy.

CONCLUSION: This presentation will highlight our most recent efforts in validating the biological activity of B7H6 ligands.

BMS03

Structure-activity relationship studies of the cytotoxic D-(KLAKLAK)2 peptide sequence and its related analogs

Rana, N.K. (student); Sabatino, D.S. Seton Hall University, Dept. of Chemistry & Biochemistry

INTRODUCTION: The antimicrobial peptide D-(KLAKLAK)2, was designed to be perfectly amphipathic in a helical conformation. The amphipathic helical domains are also found in membrane recognition sites, such as in ion channel proteins, signaling, antimicrobial and venom peptides. This property facilitates its bacterial cell membrane translocation for antimicrobial activity. The apoptosis inducing (pro-apoptotic) peptide sequence, D-(KLAKLAK)2, has been shown to disrupt mitochondrial structure and activity, ultimately leading to cell death in bacteria. A variety of different approaches have been developed for enhancing the cytotoxic activity of this peptide in mammalian cells, including cancer. Our work describes an optimized Fmoc-based solid phase peptide synthesis (SPPS) of the cytotoxic D-(KLAKLAK)2 peptide sequence and its related analogs on a polar poly (ethylene) glycol resin.

METHODS: The peptides were synthesized in good purities (>95%) and isolated yields (40%) following RP-HPLC. Peptide identities were confirmed by molecular weight following LC/MS analyses. Peptide structural properties were next evaluated.

RESULTS: Circular Dichroism (CD) spectroscopy of the peptides (60-0.006 uM) in water, phosphate buffered saline (PBS) and 2,2,2-trifluoroethanol (TFE) validated the anticipated α-helix peptide secondary structure. The biological relevance of the structurally pre-organized peptides is examined in an effort to delineate the trends in cell-based structure-activity relationship studies. This presentation will thus showcase the synthesis and structural properties of this important bio-active peptide sequence. The solid phase peptide synthesis and characterization of the cytotoxic D-(KLAKLAK)2 peptide sequence was successfully validated in this study. The peptide was isolated in 40% yields and with purities>95% by RP-HPLC. CD spectroscopy demonstrated helical and sheet structures that were contingent on the sample concentration and solvent conditions. Distinct helical structures were observed in dilute aqueous media.

CONCLUSION: These structural effects may have important implications in peptide biology.

BMS04

Outcomes of muscle reinnervation with direct nerve implantation into the native motor zone of the target muscle

Sobotka, S. (associate scientist); Chen, J.; Nyirenda, T.; Mu, L. Hackensack University Health Network

INTRODUCTION: Our recent work has demonstrated that the native motor zone (NMZ) within a given skeletal muscle is the best site for muscle reinnervation. This study was designed to investigate the efficacy of direct nerve implantation (DNI) into the NMZ of denervated sternomastoid (SM) muscle in a rat model.

METHODS: The right SM muscle was experimentally denervated by transecting its innervating nerve at its entrance to the muscle (motor point). The proximal stump of the severed SM nerve was immediately implanted into a small muscle slit made in the NMZ of the muscle where denervated motor endplates (MEPs) were concentrated. The outcomes of DNI-NMZ reinnervation were evaluated 3 months after surgery. Specifically, the degree of functional recovery was examined with muscle force measurement and the extent of nerve regeneration and muscle reinnervation was assessed using morphological, histochemical and immunohistochemical methods.

RESULTS: The results showed that DNI-NMZ resulted in satisfactory recovery of muscle force (64% of the control) 3 months after surgery. Immunostained muscle sections showed that this reinnervation technique yielded abundant regenerating axons in the target muscle.

CONCLUSION: These findings suggest that DNI-NMZ holds promise in the treatment of muscle paralysis. Further investigations into the potential use of this technique for muscle reinnervation are warranted.

Clinical Investigations

CI01

Integrating surgical philanthropy into surgical training

Aziz, S.R. (attending) Hackensack University Health Network

INTRODUCTION: As technology and ease of migration evolves, the importance of Global health increases. Having health care providers who have global health experience creates care givers who are more cognizant of cultural needs, differences, and improves overall sensitivity. This in turn allows health care providers to provide more productive and efficient care.

METHODS: An anonymous 26-question survey was electronically mailed to 45 individuals identified as having participated in a cleft lip/palate mission during residency. The survey was created and distributed, and the data were collected using the online survey engine Survey Monkey.

RESULTS: Thirty-nine individuals (86.7%) completed the survey. Of these, 27 were men (69.2%) and 12were women (30.8%). Thirty-two (82.1%) were oral and maxillofacial surgeons, 4 (10.3) were plastic and reconstructive surgeons, 1 (2.6%) was an otolaryngologist, and 2 (5.1%) were pediatric dentists. Twenty-five respondents (64.1%) stated that, before their first mission, they had not operated on a primary cleft lip; 21 (53.8%) noted that they had not operated on a primary cleft palate before their first mission. Thirty-six (92.3%) noted that their mission experience improved their ability to repair facial clefts.Thirty-seven (94.9%) believed their mission experience improved their overall surgical skill. All respondents (n = 39, 100%) believed their mission experience improved their overall ability to evaluate patients with cleft. Thirty-six (92.3%) believed their experience in humanitarian missions made them more culturally sensitive/competent health care providers. Thirty-eight respondents (97.4%) believed these missions made them more socially aware of the differences in access/availability of health care globally.

CONCLUSION: All respondents believed that participation in a humanitarian mission during residency was a positive part of their training. In addition, these missions allowed the residents to develop as surgeons and improve their awareness of global health care and cultural competence. Given these important educational aspects,participation in a humanitarian mission should be considered a required part of residency training.

CI02

Reduction in red blood cell utilization associated with a blood conservation initiative in a SICU

Bicking, K. (clinical pharmacist); Monchar, S.; Castro, L.; Blatt, M.M.; Perez, J.M. Hackensack University Health Network

INTRODUCTION: Transfusion of red blood cells (RBC) is common practice in critically ill patients. Between 40%-50% of patients admitted to the ICU receive at least one unit of RBC during their ICU admission despite transfusion-related risks and the lack of supporting evidence for transfusion in hemodynamically stable patients with anemia. In efforts to reduce unnecessary RBC transfusion in the surgical intensive care unit (SICU) including trauma patients, a multifaceted blood conservation initiative was undertaken.

METHODS: Retrospective, single center before and after cohort study of patients in a 14 bed SICU. Several blood conservation interventions were sequentially implemented over an 18 month period. These included a reduction in laboratory draws, thromboelastography, a clinical decision making algorithm embedded in an order set promoting single unit transfusions and education to clinical staff, patients and family members of the hemoglobin threshold (hgb) of 7 g/dL in patients without active hemorrhage. Data was compared to a historical sample excluding patients receiving massive transfusion protocol.

RESULTS: A total of 2187 SICU admissions were evaluated; 842 in the historical group (HG) and 1345 in the rolling intervention group (RIG). The percentage of patients receiving RBC transfusions and the number of units transfused did not differ between groups, however the number of RBC units transfused for a hgb $\geq$ 7 g/dL significantly decreased each year (67.8% v. 58 %, p 0.01) between year one and two and (58% v. 44.8%, $p < 0.01$) between year two and three. Two or more unit RBC transfusions decreased from 26.5% to 14.6% ($p < 0.05$). Although not statistically significant, there was a decrease in the mean hgb prior to transfusions after the intervention (7.45 g/dL vs. 7.07 g/dL).

CONCLUSION: In SICU patients particularly prone to RBC transfusions, a multifaceted approach to blood conservation significantly reduced RBC transfusions in patients with a hbg $\geq$ 7 g/dL. Additionally, there was an increase in single unit transfusions administered in lieu of 2 or more units.

CIO3

Oxygen therapy versus IV hydration for treatment of idiopathic oligohydramnios yields greater improvement in indicators of fetal well-being

Bilinski, R. (resident); Al-Khan, A.; Alvarez, M.; Illsley, N.P.; Zamudio, S.; Alvarez-Perez J. Hackensack University Health Network

INTRODUCTION: Oligohydramnios is a complication of pregnancy in which the amniotic fluid surrounding the fetus is reduced. Amniotic fluid is critical for fetal well-being and development, as it permits ease in fetal movement and is required for proper lung development. Oligohydramnios affects 1-3% of normal, otherwise healthy pregnancies. It is associated with an increased risk of fetal morbidity and mortality. Amniotic fluid volume is stable from 22-39 weeks of pregnancy. Conventional therapy in women without any identified cause of oligohydramnios is bed-rest and hydration. We conducted a prospective comparison of oxygen supplementation plus intravenous hydration (IVH) versus IVH treatment alone in a cohort of women with idiopathic oligohydramnios.

METHODS: Inclusion criteria were good health (no chronic diseases such as hypertension, diabetes), no evidence of pregnancy complications, and previous anatomy scans that revealed no suspicion of genetic syndromes or malformations known to cause oligohydramnios. The diagnosis of oligohydramnios was made where the ultrasound-based measurement of amniotic fluid, called the amniotic fluid index (AFI) was <5.6. Values less than 5.6 are <2.5th centile for normal 3rd trimester pregnant women. Patients (n=83) were randomized to receive bed rest, oxygen (2L/min by nasal cannula) and IVH or bed rest and IV hydration. The umbilical artery systolic/diastolic (SD) ratio, reflecting resistance to blood flow in the placenta and AFI were measured prior to and on days 3 and 7 after treatment.

RESULTS: Women in the oxygen+IVH versus IVH arms of the study were similar in demographic characteristics, gestational age at diagnosis, pre-treatment AFI and umbilical artery S/D ratio at study entry. The S/D ratio was abnormally high pre-treatment in 68% of the oxygen-treated plus IVH group and 59% of the IVH-alone treatment group. There was significant interaction ($p<0.0001$) between treatment modality and therapeutic results. Both treatments led to an increase in AFI, but the increase was greater in the oxygen-treated group at day 3 and was sustained at higher levels by day 7 ($p<0.0001$). Women receiving oxygen+IVH therapy had a decrease in the umbilical S/D ratio ($p<0.0001$); in IVH alone there was no change. Regardless of therapeutic modality, male fetuses had greater improvement in AFI than female fetuses ($p<0.001$). Despite these differences, gestational age at delivery was similar in the two groups, all infants survived, and, while most were delivered pre-term, none were small-for-gestational age (birth weight <10th centile).

CONCLUSION: Oxygen therapy added to intravenous hydration as a treatment for idiopathic oligohydramnios improves fetal well-being to a greater degree than IVH alone. Normalization of AFI to values >5.6 by day 7 after treatment occurred in 88% of the oxygen-treated+IVH group and 79% of the IVH alone group. Of particular importance is the improvement in the umbilical artery S/D ratio in the oxygen-treated arm of the study, an improvement not seen in the IVH group. The S/D ratio decreased by more than 10% (22/49 patients) and returned to a normal value for gestational age in15 of the oxygen-treated group. This contrasts markedly with the IVH group, in which no patients had a decrease in the S/D ratio.

CIO4

Baseline autonomic function in pediatric epilepsy

Bitra R.K. (resident); Rosenberg M.L. JFK Medical Center

INTRODUCTION: Central autonomic dysfunction has been documented in patients with epilepsy during the ictal, interictal and postictal periods. These changes are of potential import as they are thought to contribute to the cardiorespiratory depression implicated in SUDEP. Literature shows that central autonomic control is lateralized with the right hemisphere predominantly controlling sympathetic tone while the left hemisphere is primarily responsible for parasympathetic influences. Based on this hemispheric localization, we hypothesized that the difference in baseline ANS parameters in pediatric patients with epilepsy can be expected based on the type and localization of epilepsy

METHODS: Sixty-nine patients, aged 2 to 23 years, were studied. There were 31 male and 38 female subjects. These patients were admitted for ambulatory video EEG. Interictal ANS data was obtained during their admission using ANSAR. This measured 17 basic measures of autonomic tone relating to heart rate variability, sympathetic and parasympathetic functions. The clinical data and the video EEG were used to define the seizure type and its localization. The data was analyzed using Minitabls looking for potential correlations between ANS functions and seizure type and localization. RESULTS: We compared focal vs. generalized, right vs. left, frontal vs, temporal as well as pseudo vs true seizure.

CONCLUSION: Contrary to our hypothesis we did not find any significant changes in baseline ANS studies in pediatric epileptic patients that could distinguish between any of these groups.

CIO5

Our experience in the development of a medical psychatiric unit (MPU)

Coira, D. (attending); Grady, M.; Spariosu, M.; Coira, R.
Hackensack University Health Network, Saint Georges Medical School

INTRODUCTION: Patients co-morbid medical and psychaitric illness can be difficult to treat. They often receive fragmented care that is lengthy and costly. Medical Psychaitric Units are best suited to treat these patients. Typically, Medical Units are not equipped to handle psychotic, manic, or agitated patients and psychiatric units cannot handle patients requiring intravenous antibiotics, telemetry, naso-gastric tubes, or central lines. These patient recieve suquential treatment, being transferred to psychiatric units after medical stabilization, resulting in longer lengths of stay and more complications.

METHODS: We present our experience of 11 years developing a MPU by monitoring the number of admissions, defining admission criteria and establishing staff competencies.

RESULTS: The number of admissions increased every year from 600 to 1400. The net contribution margin increased yearly from $500,000 to $3,000,000. Patient satisfaction icreased. Staff satisfaction increased. Reduction in the stigma of mental illness.

CONCLUSION: Medical Psychiatric units help reduce the stigma of mental illness. They also help reduce the cost of healthcare and provide a setting to teach residents and students in the delivery of healthcare in a humane, empathic, and efficient manner. Patient and staff satisfaction is significantly better than with sequential admissions to medical and psychiatric units.

CIO6

The epithelial-mesenchymal transition in third trimester human placental extravillous trophoblast differentiation

DaSilva-Arnold, S. (student); Al-Khan, A.; Zamudio, S.; Illsley, N.P. Hackensack University Health Network

INTRODUCTION: One of the most important processes in human placental development is the remodeling of the uterine spiral arteries into non-reactive vessels capable of the high-volume blood flow required for fetal growth. Invasive placental extravillous trophoblast cells (EVT) are one of the primary cell types involved. EVT differentiate from placental cytotrophoblast cells (CTB) and invade into the uterus. The differentiation process shows similarities to the epithelial-mesenchymal transition (EMT), observed in cancer metastasis, in which epithelia cells lose polarity, detach from the epithelium, acquire mesenchymal characteristics and become invasive. We asked whether third trimester CTB to EVT differentiation was an EMT process, similar to that observed previously in the first trimester.

METHODS: We compared CTB and EVT obtained from normal, term pregnancies (n=4,8). Both cell types were isolated by enzymatic digestion, Percoll gradient separation and immunomagnetic purification. EVT were positively selected using the EVT-specific marker, HLA-G. CTB were subject to negative selection, removing cells displaying HLA Class I antigens. Cell purity was assessed by flow cytometry. RNA was extracted and assayed to determine integrity. RNA samples were then reverse transcribed and analysed on a qPCR array containing EMT-associated genes using an ABI 7900HT Fast Real Time PCR system. Differential gene expression was calculated by the 2-ΔΔCT method using B2M, GAPDH, RPLP0 and HPRT1 as housekeeping genes.

RESULTS: Flow cytometric analysis using HLA-G as an EVT marker and cytokeratin-7 as a CTB marker showed purities of 92.6±1.2% and 94.5±4.5% respectively; corresponding RIN scores were 9.6±0.1 and 8.2±0.2, demonstrating good RNA integrity. Comparison of CTB and EVT showed that of the 84 genes in the array, 75 showed significant changes, with 31 up-regulated and 44 down-regulated. These changes include many of the classical markers of the EMT, shown here as fold change in EVT expression compared to CTB. These include decreased expression of epithelial marker genes (OCLN, -71.5; EGFR, -8.9; CDH1, -2.8) and increased mesenchymal gene expression (FN1, 32.5; ITGA5, 21.0, ITGB1, 2.0). There are also prominent changes in the expression of proteases (MMP2, 72; MMP3, 12; MMP9, -18) and transcriptional EMT regulators (TWIST1, -30; SNAI1, 2.0; SNAI2, 9.5; ZEB2, -4.9).

CONCLUSION: The differentiation of CTB into EVT involves changes characteristic of EMT, including loss of cell-cell interaction proteins, an integrin switch, up-regulation of proteases and inhibitors and alterations in other EMT-related cellular components. We conclude that CTB-EVT differentiation is an EMT process, albeit different from those types previously identified. Comparison with the first trimester process however shows that this process is much more limited in the third trimester, consistent with the reduction in EVT invasiveness over gestation. This suggests that third trimester EVT exist in a constrained, metastable state.

CI07

What residents don't know will hurt them; The 2015 council of emergency medicine residency directors patient satisfaction needs assessment

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INTRODUCTION: Since the adoption of the Affordable Care Act in 2010 and arguably earlier, Patient Satisfaction (PS) has become a metric that can profoundly affect the careers of individual physicians, the functioning of entire departments and the fiscal balance of most hospitals. While government and hospital mandates demonstrate the prominence of PS as a quality measure, no such mandate exists for its education. The objective of this study was to determine the education and evaluation landscape for PS in categorical Emergency Medicine (EM) residencies.

METHODS: This was a prospective survey analysis of the Council of Residency Directors (CORD) membership. Program directors (PDs), assistant PDs and core faculty who are part of the CORD listserv were sent an email link to a brief, anonymous electronic survey. Respondents were asked their position in the residency, the name of their department and questions regarding the presence and types of PS evaluative data and education they provide.

RESULTS: 146 responses were obtained from 139 individual residencies, representing 72% of all categorical EM residencies. 27% of responding residencies provide PS data to their residents. Of that 27%, 37% provide third party acquired data specifically about residents, 39% provide third party (attending) data on cases with resident participation, 37% provide internally acquired quantitative data with others providing simulation scores, anecdotes and other modalities. 35% of residencies have organized PS curricula. 96% of those utilize formal didactics, but others also use small group sessions (49%), simulation (47%) and asynchronous materials (34%). All residencies with curricula explain techniques that can improve PS scores but only 47% explain the differences between surveys residents may be evaluated with upon graduation.

CONCLUSION: The majority of categorical EM residencies do not provide either PS data or any organized PS curriculum. Those that do utilize a heterogeneous set of data collection modalities and educational techniques. Further work is needed improve education given the high stakes of PS in EM careers.

CI08

Contrast CT scans in the emergency department: Is there really an increased risk of adverse clinical outcomes?

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INTRODUCTION: Contrast-induced nephropathy has received much attention but most studies have defined it as an increase in the serum creatinine of questionable clinical importance to the clinician. The primary objective of this retrospective, controlled cohort study was to determine the incidence of adverse patient-oriented outcomes in patients receiving IV contrast compared to demographically matched ED patients not receiving contrast. Our hypothesis was that there would be no increase in death or dialysis amongst patients receiving IV contrast.

METHODS: The study group consisted of ED patients who were admitted and received both IV contrast in the ED for CT imaging with at least one serum creatinine in the ED prior to the study and one more in the following 96 hours. We then compared these to a control group of admitted ED patients who received a CT without IV contrast. The incidence of CIN (defined as a rise in the serum creatinine of 25% or greater) and of 2 adverse patient oriented outcomes, death and dialysis, were compared.

RESULTS: Of 6,954 patients in the contrast group, 598 (8.6%) met the definition for CIN compared with 87/908 (9.6%) in the non-contrast CT group (P = .324). There were no instances of dialysis in the 909 patients in the non-contrast group versus 16 dialysis patients in the 6954 patients receiving contrast (p =.148) There were a total of 11 deaths in the 908 non-contrast patients compared with 106 in those receiving contrast (1.2% vs. 1.5% p=.24).

CONCLUSION: Patients receiving IV contrast for CTs were not at increased risk for CIN as usually defined nor was their risk of death or dialysis worse than their non-contrast counterparts. Clinicians should realize that the risk of a poor outcome due to IV contrast material in modern practice is extremely low and is similar to that seen in hospitalized patients not receiving contrast.

CI09

Provider satisfaction in hospital-based specialties at Hackensack University Medical Center

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INTRODUCTION: Physician satisfaction has been shown to correlate with patient adherence, better care and greater patient satisfaction. Additionally, physician satisfaction may have direct implications on physician recruitment and retention. We sought to explore how satisfied hospital based providers are with their jobs at Hackensack University Medical Center, and we sought to identify possible factors contributing to their overall job satisfaction. To do this we performed a cross sectional survey of 93 physicians from five specialties: emergency medicine (n=17), internal medicine (n=19), obstetrics and gynecology (n=24), pediatrics (n=20) and surgery (n=12). Physicians from each specialty were eligible for participation if they attended their respective monthly departmental meeting when

METHODS: We performed a cross sectional survey of 93 physicians from five specialties: emergency medicine (n=17), internal medicine (n=19), obstetrics and gynecology (n=24), pediatrics (n=21) and surgery (n=12). Physicians from each specialty were eligible for participation if they attended their respective monthly departmental meeting when the survey was fielded.

RESULTS: Eighty-eight percent of all physicians sampled reported having high job satisfaction (n=82). The percent of providers with high job satisfaction by specialty was 94% emergency medicine (n=16), 89.5% internal medicine (n=17), 71% obstetrics and gynecology (n= 17), 95% pediatrics (n= 21) and 100% for surgery (n=12). There was a significant association noted between specialties and job satisfaction (p=0.0180), which was driven by the difference in high satisfaction between emergency medicine (94%) and obstetrics and gynecology (71%). There were no significant associations between high job satisfaction and years of experience, hours spent with family, number of administrative hours or number of clinical hours.

CONCLUSION: Hackensack University Medical Center physicians reported high levels of job satisfaction. When compared to recent published studies, surveyed physicians at HUMC demonstrate higher levels of satisfaction. This data may promote physician recruitment at HUMC.

CI10

Bariatric orthopaedics: Total hip arthroplasty in the super-obese patients (BMI > 50 kg/m^2)

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INTRODUCTION: With the rise of obesity and the subsequent rise of osteoarthritis, there has been a steady increase in total knee arthroplasty (TKA) procedures. Therefore, the purpose of this study was to assess the clinical and patient-reported outcomes of primary THA in super-obese patients (BMI ≥ 50 kg/m2) compared to matched cohort of patients who had a normal BMI (< 25 kg/m2). The secondary objective was to assess patients' experiences in finding a treating surgeon.

METHODS: Forty-eight hips in 45 patients who had a minimum BMI of 50 kg/m2 who underwent a primary THA at one of four high-volume institutions between 2001 and 2010 were reviewed. This included 26 women and 18 men who had a mean age of 54 years (range, 36 to 71 years) and who were followed for a mean of 6 years (range, 4 to 12 years). These patients were compared to a non-obese matched cohort of 132 patients (1:3 ratio) who had undergone a THA during the same time period by the same surgeons. Outcomes evaluated included implant survivorship, complication rates, Harris Hip Scores (HHS), Short-Form 36 (SF-36) questionnaires, University of California Los Angeles (UCLA) activity scores, and patients' experience in finding a treating surgeon.

RESULTS: The super-obese cohort had a 5.5 times higher odds of undergoing revision compared to the matched group (90 versus 98%; p = 0.02) as well as a higher chance for complications (OR, 1.7; 95% CI, 1.4 to 42; p = 0.02). In addition, the super-obese cohort had lower mean HHS (82 versus 91 points; p = 0.001), SF-36 physical (39 versus 47 points; p = 0.001) and metal scores (49 versus 59 points; p = 0.001), and UCLA activity scores (3.9 versus 6.2 points; p = 0.001) compared to the matched cohort. Furthermore, super-obese individuals were evaluated by a higher mean number of orthopaedic surgeons prior to undergoing THA compared with their matched counterparts (3 versus 1 surgeon; p = 0.01).

CONCLUSION: The clinical and patient-reported outcomes of primary THA were lower in super-obese patients. Furthermore, these patients faced challenges in finding surgeons who would perform their procedure. These patients may benefit from counseling with their treating surgeon to set realistic expectations regarding the outcomes of their procedure.

CI11

Contralateral THA after index tha for avascular necrosis stratified by demographics and comorbidities

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INTRODUCTION: Currently more than 200,000 total hip arthroplasties (THA) are performed annually in the United States of which approximately 10% are due to hip avascular necrosis (AVN). The purpose of this study was to evaluate the incidence of contralateral THA in patients who had undergone and index THA due to AVN and evaluate different patient demographic, comorbidities, or radiographic findings that may have affected the findings.

METHODS: The prospectively collected database of all patients who had undergone a primary THA due to AVN at a single institution between 2000 and 2011 was evaluated. One-hundred and eighty-nine patients, 88 women and 101 men, who had a mean age of 40.5 years (range, 14 to 81 years) at the time of the initial THA were identified. The mean follow-up was 7.5 years (range, 2 to 12 years). The clinical, radiographic, and demographic data at index THA and final follow-up for both hips were further studied for the 12-year probability of progression to contralateral THA after index THA. Additionally, we evaluated potential association of this risk with demographics variables, various cormorbidities, and initial stage of osteonecrosis upon radiographic evaluation.

RESULTS: Ninety-six of the 189 patients (51%) had undergone contralateral THA. The highest incidence of contralateral THA was in patients who had Human Immunodeficiency Virus (HIV) infection (89% incidence; p=0.001), sickle cell Hemoglobinopathy (56%; p=0.005), and systemic lupus erythematous (55%; p=0.009) comorbidities. However, for all remaining causes, the incidence of contralateral THA was 31% and significantly lower that the three comorbidities that were earlier mentioned (p=.001). Ficat and Arlet Stage III or higher of the contralateral hip at the time of the initial THA was significantly correlated to a higher incidence of contralateral THA (p=0.001). A higher number of men had undergone contralateral THA compared to women (53 vs. 45%; p=0.21), however, the differences were not statistically significant. The incidence of contralateral THA for patients older than 25 was significantly higher than those who were younger than 25 (p=0.01). However, the incidence contralateral THA for age groups between 25 to 50 years old was similar to those who were older than 50 at the time of index THA. Body mass index did not correlate with the incidence of contralateral THA.

CONCLUSION: Approximately half of patients who had undergone an index THA due to AVN had undergone contralateral THA at 12 years follow-up to improve function and relieve debilitating pain of hip AVN. The authors believe that evaluation of the contralateral hip in AVN patients who have HIV, sickle cell, or systemic lupus erythematous may have clinical value.

CI12

Does co-existing lumbar spinal stenosis impair functional outcomes following primary total hip arthroplasty

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INTRODUCTION: Lumbar spinal stenosis (LSS) causes substantial morbidity, poor walking ability, and adverse health quality of life in elderly populations. Large proportions of this population often undergo total hip arthroplasties (THA) for associated hip arthritis. Therefore, the purpose of this study was to evaluate the effects of co-existing LSS on: (1) aseptic survivorship; (2) functional outcomes; (3) activity levels; (4) overall subjective physical and mental health status; and (5) satisfaction rates after primary THA.

METHODS: Sixty-eight patients who had clinico-radiographic evidence of LSS pre-operatively were compared to a 1:1 matched cohort (68 patients; 68 hips) by age, gender, body mass index, and pre-operative Harris hip scores, who did not have this condition and had undergone a primary THA. Harris hip scores (HHS), UCLA scores, SF-36 scores, and satisfaction scores were evaluated between the two cohorts.

RESULTS: Aseptic implant survivorship in LSS cohort was 98.5% which was similar to the aseptic component survivorship of 97.1% in the matched cohort (p=0.8). At final follow-up, the LSS cohort had improvements in the Harris hip scores compared to the pre-operative levels. However, LSS cohort achieved lower Harris hip scores (HHS) of mean 73 points compared to non-stenosis group which had mean scores of 80 points (p=0.02). Post-THA activity levels improved in the LSS cohort compared to pre-THA levels (4.0 vs. 4.6; p=0.04). Improvements were lower than in the non-stenotic cohort (4.6 vs. 5.2; p=0.04). Overall, at final follow-up, satisfaction scores were higher in non-stenosis group compared to LSS group (14 vs.12; p=0.002).We also found that patients having LSS and spinal surgery had lower pre-THA HHS (mean, 45 vs. 54 points; p=0.03) compared to the non-spinal surgery

cohort. In addition, there were no differences in pre-THA UCLA scores (mean, 3.9 vs. 4 points; p=0.8).

CONCLUSION: Surgeons should consider cautioning patients with preexisting lumbar canal stenosis that although they can expect relief of their arthritic symptoms following total hip arthroplasty, they may continue to expect limitations in their function, physical status, activity levels, and satisfaction levels relative to their expectations.

CI13

The Epidemiology, economic, and mortality of vertebral osteomyelitis in the US: Database study of 283,022 cases

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INTRODUCTION: It is estimated that vertebral osteomyelitis represents 3 to 5% of all cases of osteomyelitis and potentially is a fatal disease with a one-year cumulative mortality rate of approximately 11%. The exact incidence of this disease has not been widely evaluated, and most of the available data are based on small series and older studies. Thus, the purpose of this study was to attempt to assess the incident and epidemiology of vertebral osteomyelitis in the United States and over a 13-year period.

METHODS: The Nationwide Inpatient Sample (NIS) database was carefully evaluated to identify all patients who were admitted for a diagnosis of vertebral osteomyelitis in the United States from 1998 to 2010 using related ICD-9 codes (730.28, 730.08, 730.2, 730.00, 722.90, 722.91, 722.92, 722.93). National trends in incidence, patient demographics, mortality during the hospital stay, length-of-stay (LOS), and total admission costs were further evaluated. The United States Census data was used to assess the annual US population. The impacts of various contributing factors to these outcomes were further evaluated using adjusted multivariable linear and logistic regression analyses.

RESULTS: The study population consisted of 283,022 admissions for vertebral osteomyelitis, however, the incidence of this condition increased from approximately 15,400 cases (6.5 per 100,000 US population) in 1998 to 27,710 (9 per 100,000 US population) in 2010. Our model estimated the incidence of this disease to reach 32,500 in 2015 (R^2 =0.91). Of all cases, approximately 39% were treated operatively during the same admission. Overall, 55% of patients were younger than 60 years of age, 54% were male, 28% were non-white, and 43% had Medicare insurance. The overall mortality during the hospital stay had reduced from 2.1% in 1998 to 1.4% in 2010. Mortality rate was significantly higher with older age (p<0.01), male gender (p=0.02), higher Deyo comorbidity score (p<0.01), and urban teaching hospitals (p<0.01), however, race had not affected the mortality. In various adjusted multivariable regression models, comorbidity-specific mortality risk was increased with previous myocardial infarct (p=0.03), congestive heart failure (p<0.01), peripheral vascular disease (p=0.03), cerebrovascular disease (p<0.01), rhematological disease (p=0.01), liver disease (P<0.01), diabetes (p<0.01), renal disease

CONCLUSION: The incidence of vertebral osteomyelitis has been increasing in the United States, and various factors were identified to affect the inpatient mortality rate, length-of-stay, and admission costs. Patients may benefit from counseling with their orthopaedic surgeons to set realistic expectations. The findings of this study can be used for all future related comparative studies.

CI14

Use of a cord blood F-dex monocyte binding assay to study the glucocorticoid receptor in neonates

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INTRODUCTION: Glucocorticoids play an important role in the developing fetus, the most important of which is lung maturation by increasing surfactant production and release. Glucocorticoid receptor (GR) functioning changes throughout the fetal period, especially during the transition to extrauterine life. Given the importance of glucocorticoids in lung development and functioning, studying glucocorticoid sensitivity in this population would be helpful, especially in the preterm population, to determine steroid treatment for better lung outcomes. Few groups have characterized the glucocorticoid receptor and its sensitivity using cord blood monocytes.

METHODS: 20 cord blood samples were collected from term neonates (37-40 week gestation) born to mothers with no pregnancy complications and no labor (scheduled C-Section). We compared the F-Dex binding in this group to 50 healthy pediatric pts (5-22 yo).

RESULTS: We found that the F-Dex binding of the studied neonatal population was similar (within 1 SD) to the pediatric population through the initial concentration ranges of F-Dex. However, there was an increase in binding in the neonatal population in comparison to the pediatric population at the highest concentration

CONCLUSION: A cord blood F-Dex monocyte binding assay can be used to characterize the GR in neonates.

It showed that there is a difference in F-Dex binding at the highest concentrations in the neonate population, as compared to our pediatric population, most likely related to changes in the GR in the process of adaptation to extrauterine life, Our future studies will use this assay to study the GR in preterm neonates to help us determine appropriate steroid dosing and better lung outcomes in these patients.

CI15

Assessing acting intern readiness for residency with a paper osce

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INTRODUCTION: The AAMC 2014 publication entitled Core Entrustable Professional Activities for Entering Residency (CEPAER) lists 13 activities a PGY-1 resident should be able to perform without direct supervision on day 1 of residency. Prior to implementation of the paper OSCE, Acting Intern (AI) competence was assessed only by the supervising attending using a standardized checklist. We sought a cost-effective and efficient means to document AI competence in diagnostic reasoning and writing admitting orders and prescriptions (now elements of CEPAER 2,3 and 4) by direct faculty observation. Prescription and order writing are not addressed in the end-of-clerkship OSCE which all third-year students complete; diagnostic reasoning is assessed in two stations.

METHODS: Prior to implementation of the paper OSCE, Acting Intern (AI) competence was assessed only by the supervising attending using a standardized checklist. Objective: We sought a cost-effective and efficient means to document AI competence in diagnostic reasoning and writing admitting orders and prescriptions (now elements of CEPAER 2, 3 and 4) by direct faculty observation. Prescription and order writing are not addressed in the end-of-clerkship OSCE which all third-year students complete; diagnostic reasoning is assessed in two stations. Innovation/Program: All students completing an Acting Internship in Pediatrics at our institutions are provided written and online instruction in writing orders and prescriptions at the start of the rotation, and supervised practice is provided throughout the rotation. Acting Interns are expected to offer their thoughts on patient diagnosis and differential diagnoses during daily attending rounds, at Morning Report and in their documentation of H&Ps, daily progress notes and discharge summaries. Ongoing formative feedback is provided by supervising faculty and senior residents. At the conclusion of the rotation each AI completes a 3-station, open-book paper OSCE. OSCE stations were developed to specifically assess AI competence in the 4 targeted areas. The AI Director reviews submitted work and assesses competence with a predetermined scoring guide; scores of 80 and above are considered to reflect competence. Feedback is provided to students within 24 hours.

RESULTS: Over the past 7 years, 120 students completed an Acting Internship in Pediatrics and the end-of-rotation paper OSCE. With few exceptions, students demonstrated competence in the targeted CEPAER at the conclusion of the AI. They performed best on the prescription writing station and had greater difficulty writing complete admitting orders and correctly identifying all diagnoses.

DISCUSSION: Students can achieve the expected level of competence in these core EPAs during a rigorous 4-week Acting Internship. A paper OSCE is an inexpensive, time-effective, reliable and well-received tool to assess and document student readiness for residency training in the selected CEPAER.

CI16

The risk of gastric cancer in patients diagnosed with certain other primary neoplasms, using the SEER 9 registry

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INTRODUCTION: Recent estimates of gastric cancer incidence in the United States reveal that 21,320 patients will be diagnosed in the year 20121. Of these individuals, approximately 10,540 patients are expected to succumb to the disease1. Epidemiological studies have shown that on average, six months pass between first symptoms of gastric cancer and diagnosis2. By minimizing this detection delay, earlier screening and diagnosis may lead to better prognosis at an earlier stage of the disease.

METHODS: Using the National Cancer Institute's Surveillance, Epidemiology, and End Results 9 registry database 1973-1999 (SEER), we assessed incidence of gastric cancer in patients who were diagnosed with previous malignancies in the oral cavity and pharynx, colon and rectum, respiratory system, breast, prostate, urinary bladder, kidney and renal pelvis, or the brain. We then determined Standardized Incident Ratios (SIR) by comparing the results to the incidence of gastric cancer in the general population. SIRs were evaluated across race, gender, and age at diagnosis of the original neoplasm.

RESULTS: A total of 5,434 patients were diagnosed with gastric neoplasm subsequent to a previously diagnosed cancer. The SIR for respiratory system and brain cancers were highest with values of 1.48 and 1.44 respectively, indicating that these were the highest risk primary neoplasms for developing gastric cancer. Also at higher risk of developing gastric

neoplasm were patients who were non-white or who developed their first cancer at a younger age.

CONCLUSION: Our analysis revealed a higher risk of gastric cancer in patients diagnosed with certain other primary neoplasms. These patients may benefit from more aggressive screening measures than those normally used for the general population.

CI17

Below knee DVT: Clinically silent is not clinically insignificant

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INTRODUCTION: Blunt trauma patients are at high risk for venous thromboembolism. Traditionally, only symptomatic patients or those suspected of having DVT had venous duplex ultrasound (VDU) performed. However, many trauma centers perform screening VDU on all moderate to high-risk patients. Current American College of Chest Physician (ACCP) guidelines for the management of VTE recommend against therapeutic anticoagulation of asymptomatic below knee deep vein thrombosis (BKDVT). However, a recent study by Olson et al (2014), BKDVT was associated with a higher incidence of PE than above knee DVT (6.1% vs. 1.1%). The purpose of this study was to evaluate the incidence of BKDVT in our moderate to high-risk trauma patients who receive DVT prophylaxis and to assess the rate of associated PE.

METHODS: A retrospective analysis of all moderate to high-risk blunt trauma patients presenting to our university affiliated medical center between May 2010 and March 2015, ≥ 18 years of age, LOS ≥ 48 hours, screened positive for DVT within 30 days of admission.

RESULTS: Of the 4,139 patients attended by our trauma service, 1068 were categorized as moderate to high risk and were screened for DVT. The overall DVT rate was 3.4% (n=142) with 72 positive for AKDVT and 70 positive for BKDVT. The overall rate of PE was 0.6%. Those in the BKDVT group had twice the rate of PE as those in the AKDVT group (n=8 vs. 4) despite aggressive DVT prophylaxis. A multivariate logistic regression analysis failed to reveal any statistically significant difference between those in the BKDVT vs. the AKDVT group.

CONCLUSION: Our findings support those of recent studies and suggest that BKDVT is clinically significant and that these patients should be considered for therapeutic anticoagulation or IVC filter placement. The absence of statistically significant differences between those with AKDVT vs. BKDVT begs the question "Why do we treat these patients differently?"

CI18

Geriatric consultation in trauma patients reduces high risk medication usage at discharge

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INTRODUCTION: Traumatic injury is rising in a growing geriatric population and is associated with higher mortality and complication rates. Studies have shown geriatric consultation (GC) to be vital in reducing risk factors, such as delirium, which contribute to adverse outcomes. This study aims to determine if receiving a GC had an impact on high risk medication usage.

METHODS: Patients eligible for a GC, age > 65 and length of stay > 2 days, were identified via a chart review from July 2013 to July 2014 at a Level II trauma center. This population was divided into those with and without a GC. Data collected included demographics, injury severity, medications, delirium, mortality, and readmission. Delirium was defined as a positive confusion assessment method for the ICU (CAM) score or documentation of surrogate markers in the chart such as confusion/agitation and/or use of restraints/sitter. High risk medications were defined as per the Beers Criteria. Statistical analysis involved using appropriate standard tests to compare groups including multivariate logistic regression.

RESULTS: A 104 patients were included, 49 (47%) of which received a GC. The most common reason for admission was falls. Groups were comparable on injury severity score (p=0.052), co-morbidities (p=0.41), and high risk medication use upon admission (p=0.341); however, those with a GC were older (p=0.04). Delirium was the most common reason for consultation (86%, n=49). The GC group were less likely to be discharged on high risk medications (OR=0.37, CI:0.17-0.82) irrespective of whether they were on these medications at home. This association remained statistically significant in the multivariate logistic regression model (OR=0.43, CI: 0.19- 0.96). In depth examination of high risk medications showed significant reduction in benzodiazepine use in the GC group (p=0.01).

CONCLUSION: Geriatric trauma patients are at increased risk of adverse outcomes after injury. Research has demonstrated that GC reduces delirium in patients as geriatricians assist with medication reconciliation. Our study further identifies GC as minimizing high risk medication use upon discharge. Further studies are needed to explore how the latter helps reduce readmission rates and mortality. A multidisciplinary trauma team including a geriatrician must exist to address the unique medical, psychological, functional, and social issues of a growing aged trauma population.

CI19

Identifying communication behaviors associated with higher ed patient satisfaction scores

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INTRODUCTION: While it is known that certain behaviors of medical providers correlate with higher patient satisfaction, there is insufficient data on which behaviors are most important.

METHODS: We implemented a training program called PatientSET "satisfaction every time" consisting of 4 hours of online, video CME education that included the following communication behaviors during the initial ED interaction between providers and patients: Pause before entering, Smile, Introduce yourself, Shake hands, Acknowledge the wait and apologize, Begin with open-ended question such as "How can I help you?", Overestimate Time and Perform at least 1 non-medical gesture. This is a retrospective review of 272 observations of 19 emergency department providers at a high volume, high acuity ED. Providers were included if they had N>30 Press Ganey (PG) surveys and excluded if they had N<30 PG surveys. High performers were defined as having PG scores > 40th percentile while low performers were defined as having PG scores < 40th percentile. The high performers had an average PG score of 69% while the low performers had an average PG score of 14%. The Low performers were observed again 6 months later after completion of the PatientSET training program. Any associations with the number of times the clinicians exhibited the positive behavior was examined using Poisson regression analysis.

RESULTS: Our results detailed 8 high performing providers and 11 low performing providers as related to frequency of PatientSET behavior use. Each provider had bedside observations completed by trained observers. The results showed that being a high performing provider was associated with significantly higher frequency of 6 PatientSET behaviors (RR ranging from 1.55 to 16.76), including all behaviors except "Pause before entering" and "Introduce yourself". High performers had a higher frequency of PatientSET behaviors across 6/8 categories with a mean p value of <0.0001. Observations were obtained 6 months later for 8 of the 11 low performers after the education intervention. After their educational intervention, low performing provider's compliance with the PatientSET improved in 4 behaviors with relative ratios (RR) ranging from 2.3 to 10.0. Overall their compliance with the PatientSET improved across all behaviors with a mean p value <0.01.

CONCLUSION: We conclude that using a provider education tool like PatientSET is effective in identifying behavioral modifiers that lead to improved ED provider-patient interactions. Among our high and low performing providers, the high performing providers consistently performed the positive PatientSET behaviors. In addition, when low performers were observed 6 months later after the education intervention, they significantly improved their compliance. These specific positive behaviors may be used by ED providers to improve the patient experience.

CI20

Association of suture materials, layers of uterine closure and subsequent development of abnormally invasive placenta

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INTRODUCTION: Placenta accreta, or abnormally invasive placenta (AIP), occurs when the placenta invades the uterine myometrium without the formation of the intervening decidua basalis. AIP is histopathologically classified: -FOCAL ACCRETA (isolated superficial areas of invasion) or ACCRETA (diffuse superficial invasion) -INCRETA, deep myometrial invasion that does not reach the serosa; -PERCRETA: invasion through the entire uterine serosa/ into adjacent organs, primarily the bladder. The major risk factors for AIP are uterine scarring (usually from cesarean section - CS) and placenta previa. Risk increases with # of prior CS. Global incidence has risen in tandem with the CS rate, however some reports suggest the rise has been increasing disproportionately, suggesting other factors may be involved. We hypothesized that differences in suture material or type of uterine closure may contribute to an increased risk of AIP in a subsequent pregnancy and may also be associated with its severity.

METHODS: We conducted a retrospective chart review of all patients cared for in the Center for Abnormal Placentation (CAP) at Hackensack University Medical Center from 2004-2014. Histologically confirmed AIP and controls (those at risk due to a history of prior CS and placenta previa) were eligible for inclusion. We included only those for whom the CS operative report prior to AIP or previa w/o AIP was available, and with suture material (chromic, monocryl, or vicryl) and single or double layer uterine wall closure documented.

RESULTS: We had 150 cases and controls from 2004 - 2014. Fifty-four met inclusion criteria (operative reports from the CS prior to diagnosis of AIP and/or

placenta previa available). We excluded patients in which more than one suture type was used (n=8). There were 32 AIP cases and 22 controls. Statistical analysis was by the Mann Whitney U, fisher's exact test or chi square as appropriate. Time interval in months from the C-section prior to the index pregnancy was 39 ± 5 in controls and 41 ± 4 in controls (mean ± SEM, p=0.83). There was no difference in the type of suture used in the pregnancy prior to AIP (31% chromic, 33% monocryl 26% vicryl) vs. controls (29% chromic, 7% vicryl, 64% monocryl). There was no relationship between suture material and disease severity. Single versus double layer uterine closure was not related to development of AIP or its severity (p=NS).

CONCLUSION: The three different suture types differ in their potential for causing inflammation, rate of absorption, and in their half-life of tensile strength. Chromic is natural material, while moncryl and vicryl are synthetic. Chromic and monocryl have shorter times for complete absorption (21 days), while vicryl is the most durable (complete absorption 60-90 days). We found no association between single versus double layer uterine closure, nor of the type suture material used in the last CS prior to a pregnancy complicated by AIP. While sample size is small, our findings regarding single versus double-layer uterine closure agree with the only prior such analysis (Sugiyama et al. BJOG 2014); data on suture material has not been previously studied.

CI21

Does SLE affect the clinical and patient-reported outcomes of total knee arthroplasty at mean 6-year follow-up?

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INTRODUCTION: Systemic lupus erythematosus (SLE) is a chronic, autoimmune, and multi-system disease with a large spectrum of clinical manifestations and a variable course which mostly affects women of child-bearing age (prevalence of 5 to 10 per 10,000 women). With the increasing life-expectancy in these SLE patients, there may be a higher incidence of arthritis without osteonecrosis. Thus, the durability of prosthetic fixation following TKA may be an issue of importance in these patients. Our purpose was to evaluate the clinical, patient-reported, and radiographic outcomes of total knee arthroplasty in a cohort of patients who had SLE compared to a matched group of patients who did not have this disease.

METHODS: All patients who had undergone a primary total knee arthroplasty at three high-volume institutions who had a diagnosis of systemic-lupus erythematosus (SLE) were reviewed. Thirty-one patients who had undergone 34 TKAs between 2001 and 2011 were identified. There were 25 women (81%) and 6 men (19%) who had a mean age of 53 years (range, 36 to 69 years) and a mean follow-up of 6 years (range, 2 to 12 years). The underlying cause of knee disease in 29 patients was osteoarthritis and in 4 knees was osteonecrosis. These patients were compared to cohort of 93 patients matched for age, gender, BMI, follow-up time, and diagnosis who did not have SLE and had undergone a primary TKA during this same time period by the same surgeons.

RESULTS: The overall septic or aseptic implant survivorships in the SLE and the matching groups were 97 and 99%, respectively which were similar (p=0.9). SLE cohort had higher odds ratio complications after surgery compared to the matching group (OR: 1.9, 1.03 to 13; p=0.17), however the differences were not significant. The mean Knee Society objective and function scores had improved to 90 points (range, 62 to 100 points) and 89 points (range, 55 to 100 points) in the SLE cohort which were similar to 91 points (range, 75 to 100 points) and 90 points (range, 67 to 100 points) in the matching group. The mean SF-36 physical (47 vs. 49 points) and mental component scores (51 vs. 53 points) were similar between the SLE and the matching group. In addition, there were no significant differences in UCLA activity scores (5.1 vs. 5.9 points) between the two cohorts.

CONCLUSION: Our study demonstrated comparable excellent clinical and patient-reported outcomes of total knee arthroplasty in patients with or without SLE comorbidity. With improvements in medical and surgical management of these patients in the recent decades, it is encouraging that total knee arthroplasty can provide excellent reproducible outcomes to improve function and alleviate pain of end-stage arthritis that is not responsive to non-operative management. More prospective studies are necessary to evaluate these outcomes at a longer follow-up.

CI22

Total shoulder arthroplasty demographics, incidence, and complications- A nationwide inpatient sample database study

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INTRODUCTION: Total shoulder arthroplasty (TSA) has become and highly popular and successful surgery to treat advanced glenohumeral arthritis, rotator cuff arthropathy, and fractures of the proximal humerus. Historical data is available investigating the epidemiology to total shoulder arthroplasty with regard to patient characteristics, outcomes and complications; however, there is a lack of studies investigating the most recent and up to date national trends related to shoulder replacement. The purpose of this study is to evaluate changes in the annual incidence, various demographics, and complications of total shoulder arthroplasty in America and over a 13-year period.

METHODS: The Nationwide Inpatient Sample (NIS), which contains a sample of 20% of all hospital admissions within the United States, was thoroughly assessed to identify all patients who were admitted for TSA the United States between 1998 and 201 using related CPT codes for. National trends in patient demographics, incidence, length-of-stay, and total admission costs were further analyzed for correlations. The impacts of contributing factors to each measureable outcome were assessed using adjusted multivariable linear and logistic regression analyses. These were used to calculate odds ratios of various cohort demographic variables and their association with mortality and length of stay (LOS). In addition, linear regression was used to calculate the total admission costs and the mean LOS.

RESULTS: Between 1998 and 2010, there were 226,170 admissions for TSA, which has risen dramatically over this time period from 8,041 to 39,072 admissions ($p < 0.0001$). The vast majority of those undergoing TSA tended to be Caucasian men between the ages of 64 and 79 years. The incidence rate of complications was 49 per 1,000 admissions and has remained similar during the study period (59 to 55 per 1,000 admissions; $p = 0.62$). Females ($p = 0.006$), those over 80 years of age ($p < 0.0001$), and those with higher Deyo Comorbidity scores ($p < 0.0001$) were most likely to suffer complications. The mean length of stay (LOS) has decreased significantly (2.96 to 2.21 days; $p < 0.0001$) with an overall mean of 2.45 days during the study time period. Females ($p < 0.0001$), African-Americans ($p < 0.0001$), those with Medicaid ($p < 0.0001$), and those with higher Deyo Comorbidity scores ($p < 0.0001$) tend to have a longer LOS. The overall mean total charge for TSA was $39,179 with a substantial increase in the mean cost over between 1998 and 2010 ($17,593 to $52,546; $p < 0.0001$).

CONCLUSION: Our study clearly demonstrates a rapid increase in incidence rates of TSAs within the 13-year period studied with a nearly 5-fold increase in frequency during that time. An increased risk of complications was noted with increased patient age, female gender, and increased Deyo score. As one would expect, comorbidities play a large role in the outcomes for TSA. The overall findings of this study regarding various aspects of total shoulder arthroplasty in America may help orthopaedic surgeons and health care providers to identify ways to better manage this procedure and select patients in the near future.

CI23

Routine use of Magnetic Resonance Imaging in adolescent idiopathic scoliosis: A comprehensive meta-analysis of published studies and particular indications

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INTRODUCTION: There are conflicting recommendations in the published literature regarding routine utilization of MRI in AIS screening. Missed neuroaxial diagnoses have catastrophic potential. This study aims to describe the literature and pool data on the use of preoperative MRI in AIS for the purposes of reaching a consensus statement.

METHODS: A MINORS criteria threshold was set for inclusion in the analysis. Sub-study analysis was performed, distinguishing incidence in sex, age, curve type, major cobb angle, and Lenke curve classification. Specific abnormalities were quantified. Forest plots were derived to estimate the pooled event rates (incidence) corresponding to 95% confidence interval.

RESULTS: 18 studies were included: 11 prospective/7 retrospective. 4,476 pts were represented. Overall incidence of neuroaxial abnormality was 8%. The pooled percentage of M/F in all cases was 34% (95% CI 24-46%), indicating there were significantly more females with abnormality. 32% of the group with neuraxial abnormality (3% of overall population) experienced a change of preop surgical plan and underwent neurosurgical decompression of abnormality prior to correction of scoliosis. Most common abnormalities detected were isolated syrinx, Chiari Type 1 Malformation, and Chiari Type 1 w/ syrinx; these, with the addition of tethered cord, were the most common indications for preop neurosurgery. Prospective studies had a lower

incidence rate of abnormality, but this was not statistically significant. The pooled incidences of abnormality in right and left curves were 9% and 15% respectively, but the difference was not found to be significant.

CONCLUSION: Though few, patients with neuraxial abnormality are at increased for neurologic injury during and following correction of AIS. Group or societal consensus should be reached as to whether or not MRI should be a part of workup for AIS.

CI24

Beta-hCG as a biomarker for abnormally invasive placenta

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INTRODUCTION: A global rise in rates of cesarean delivery (CS) is linked to a 10-fold increase in the incidence of Abnormally Invasive Placenta (AIP), from 1/25,000 in the 1950s, to 1/2500 today. Maternal mortality was 7-10% as recently as the 1980s in the USA, and can exceed 25% in developing countries. Over-invasion by the placental trophoblast cells can be shallow (accreta), deep (increta) or even through the uterine wall (percreta) and into adjacent organs. Massive hemorrhage results when removal of the placenta is attempted. The primary risk factors are scarring of the uterus and placenta previa (placenta covers the cervix and the scar). Prenatal diagnosis is required to ensure safe management and delivery, but no biomarker exists, and diagnosis using ultrasound or MRI is subjective.

METHODS: Circulating Chorionic Gonadotropin (ß-hCG) is elevated in mothers with other gestational trophoblastic diseases, and was reported as elevated in a small study of AIP. But disease severity was not considered and appropriate controls (placenta previa without AIP) were lacking. We measured ß-hCG levels in 39 cases of AIP (9 accreta, 2 increta, 28 percreta), 19 women with placenta previa and 15 normal controls ≤20 days prior to CS. ß-hCG was batch measured using an automated chemiluminescent immunoassay. AIP, placenta previa and controls were compared using ANOVA, with Bonferroni post-hoc testing to examine disease severity. Regression was used to test the effects of gestational age as ß-hCG peaks at 9-12 wks, declines rapidly thereafter, and stabilizes or declines later in gestation.

RESULTS: Whether all cases of AIP were considered together or stratified by disease severity, there was no difference between control and AIP (all AIP 18 ± 14 vs. Control 22 ± 18 IU/mL, $p = 0.77$ mean ± SD; accreta 22 ± 14; increta 34 ± 31; percreta 22 ± 19). All but two of the AIP cases also had placenta previa. However ß-hCG was greater in placenta previa without AIP (47 ± 31) than in controls, all AIP or any AIP sub-group ($p<0.005$). Gestational age at the time of blood sampling was greater in controls than placenta previa (38.7 ± 0.8 vs. 35.5 ± 2.4 wk), and AIP cases were sampled earlier than placenta previa (33.1 ± 2.1 wk, $p<0.001$). However, gestational age is unlikely to account for the differing ß-hCG levels, as it was not correlated with ß-hCG levels in AIP ($r2=0.01$, $p = 0.70$), placenta previa ($r2=0.04$, $p = 0.45$) or controls ($r2 = 0.13$, $p = 0.20$).

CONCLUSION: This is the largest sample size of AIP studied for biomarkers to date, and the first to examine disease severity in relation to a putative biomarker. An ideal biomarker should completely differentiate cases from controls, and should also reflect disease severity. ß-hCG does not meet these criteria as it does not differ in AIP vs. control. Placenta previa is the more appropriate control group both for placental location and timing of delivery, but surprisingly, ß-hCG values are elevated relative to both AIP and control.

CI25

Impact of emergency medicine residents on patient satisfaction

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INTRODUCTION: Patient satisfaction measures such as the Press-Ganey survey are used to evaluate the hospital and staff that care for patients. In recent years, several studies have assessed the impact of residents and medical students on Press-Ganey scores. Past research shows that inpatient teams with medical or surgical residents either improve or have no effect on patient satisfaction scores. To our knowledge, there is not yet any research on this interaction in the emergency department. We look here at the effect that residents have on patient satisfaction in a busy community emergency department.

METHODS: Our setting is a community emergency department with a level II trauma designation that sees 115,000 patients a year and recently established a three year emergency medicine residency. Residents complete structured training on patient satisfaction as part of their residency orientation. Press Ganey survey answers that relate to the patient-physician interaction were tabulated for the first three quarters of 2015. A total of 816 surveys were returned in this time period. Patient encounters were divided into two categories, evaluation by attending only and (attending) with resident. Patients seen by advanced practitioners were excluded. A mixed regression analysis was performed on individual questions to compare the two groups.

RESULTS: The survey items that we reviewed include evaluation of wait time, physician courtesy, physician concern for the patient's comfort, timely update of results and perceived physician communication skills. The patients treated by an attending with a resident tended give their physician interaction a higher score; however, the difference was not significant for any single item.

CONCLUSION: The patient's experience of the medical care they receive and their satisfaction with that experience are increasingly tied to both hospital reimbursement and to individual physician compensation. Resident training will necessarily impact these relationships; while having residents participate in the care of patients can add to the length and complexity of each interaction, patients evaluated by emergency medicine residents does not appear to reduce the overall patient experience.

CI26

Pseudoarthrosis rate in minimally invasive transforaminal lumbar interbody fusion(m- TLIF): 2-yr outcomes vs open TLIF

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INTRODUCTION: m-TLIF has shown similar long-term clinical outcomes with decreased perioperative morbidity and earlier return to work as compared to open TLIF. However, the rate of pseudarthrosis and the impact of various demographic or comorbid factors have not been evaluated.

METHODS: Between 2006-2012, 230 consecutive pts underwent one or two-level m-TLIF or open TLIF at a single institution. Clinical & radiographic data was reviewed. Pts with complete medical records & minimum 2 yrs f/u were included in the analysis. Demographic data, medical comorbidities, surgical and radiographic data as well as pt assessed outcomes scores (ODI, VAS) were quantified. Binomial continuous & categorical tests were used for statistical comparison between cohorts. Pseudoarthsosis was determined by 2-D computed tomography at >1yr f/u.

RESULTS: 184 pts were included in the analysis. m-TLIF had 80 pts, 35 females/45 males. Mean age 51.5(23-75), 6 revisions. TLIF had 104 pts, mean age 51yrs(14-74), 62 males/42 females,12 revisions. No significant differences were seen between the two cohorts with respect to mean age (51.5 vs 51.0 yrs), sex, medical comorbidities, number of levels fused, or revision procedures. Respective pseudoarthrosis rates were 13.7% & 11.7%(p=0.07). There was a significantly higher percentage of pseudoarthosis in pts undergoing revision procedures (p=0.02). No statistical differences were seen between choices of interbody bone graft material. No statistical differences were seen with ODI or VAS scores at 2yrs.

CONCLUSION: m-TLIF & open TLIF demonstrated comparable outcomes with regards to pseudaoarthrosis rates. Revision surgery was the only identifiable risk factor for pseudoarthrosis.

Systematic Reviews

SR01

Most frequently used spatiotemporal gait parameters in assessing ambulatory recovery in the post-stroke patient: A systematic review

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INTRODUCTION: Gait is severely impacted post stroke affecting functional recovery. Improvement of gait therefore is a common goal of clinicians and patients. Changes in the ability to walk post-stroke is often documented using several spatial and temporal parameters of gait. The purpose of this systematic review is to examine which of the specific gait parameters measured exhibit significant changes as a result of intervention or spontaneous recovery in determining ambulatory recovery post-stroke. By performing this study we hope to improve the evaluation process clinicians use to assess stroke recovery.

METHODS: PubMed, PEDro, CINHAL, Google Scholar were searched from 2000-2015. The search terms used were "Spatial Gait Parameters", "Temporal Gait Parameters", "Stroke Recovery", "Stroke", "Ambulation", "Community Ambulation" and "Stroke Rehabilitation". 3727 titles were initially identified as of 12/4/15 through PubMed (100), PEDro (72), CINHAL (35) and Google Scholar (3,520). 3,520 titles were rejected for not meeting inclusion criteria and 7 titles were further rejected because they were found to be duplicates. 33 articles were chosen for inclusion in the study.

RESULTS: Temporal and spatial gait parameters were assessed among post-stroke subjects across the intervention and normative studies, in order to assess their ambulation capabilities. Most studies reported significant changes, increases or decreases, in one or more temporal-spatial gait parameters following various interventions, including the six minute walk test, and walking on the GAITRite, among others. Whether the study was intervention based or normative in nature, gait velocity and stride length were consistently among the most frequently reported gait parameters cited as demonstrating significant improvements. Other most frequently cited gait parameters displaying significant improvements included gait symmetry, cadence, step length, step time, and double support percentage.

CONCLUSION: This review selected articles with various interventions and study designs (randomized controlled trials and descriptive analysis) and their effect on spatial and temporal gait parameters. Across all studies, gait velocity, stride length, cadence, paretic step length, step time, double support percentage and gait symmetry were the most reliable parameters sensitive to change. Therefore, future outcome measures and interventions provided by clinicians should focus on these parameters specifically when dealing with individuals following a cerebrovascular accident.

SR02

The role of glutamate and its EAAT transporters in ADHD and autism

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INTRODUCTION: This literature review examines the relationship between neurodevelopmental disorders and glutamate. Of the 5 subtypes of Na+-dependent high affinity glutamate transporter receptors that function to clear glutamate, EAAT1 and EAAT2 are found to be most abundant in the brain and are mainly expressed in astroglial cells. Of specific concern to ADHD and Autism are EAAT1 and EAAT2, transporters that clear glutamate. If there is defective functioning or a deficiency in the EAAT1/2 transporters, glutamate cannot be cleared and builds up, stimulating neurons to their demise. In ADHD, the deficiency in dopamine allows for uncontrolled glutamate release, leading to inattentiveness. The repetitive and hyperexcitable behaviors seen in ASD can also be attributed to increased stimulation by glutamate.

METHODS: A search of PubMed, UpToDate, and PsycINFO (EBSCO) was done to gather information, supplemented with articles found through the search engine Google Scholar. Websites that contained relevant information in support of research for this article were also found using Google.

RESULTS: Knowing the role of glutamate and its EAAT transporters can aid in the design of medications targeted to improve the quality of life and functional capacity in ADHD and ASD. Whether treatments act to upregulate EAAT transporters or to normalize their numbers, the overall target of medications should be to decrease glutamate accumulation in order to minimize excitotoxicity. Treatments that focus on upregulating EAAT transporters show promising results. One such treatment using Ceftriaxone, a B-lactam class antibiotic, on mice with ALS and ischemic brain injury delayed neuronal death and acted as a neuroprotective agent by increasing GLT-1 transcription and expression.

CONCLUSION: The focus on future research should be on the delicate balance of glutamate throughout different areas of the brain, not just on the excess or deficiency of the neurotransmitter in one specific area. While there is ample literature available regarding the role of glutamate and its EAAT transporters in neurologic disorders like Alzheimer's, their involvement in the pathogenesis of ADHD and ASD remains unclear and warrants further research.

SR03

A comparative review of dermal transplantation and bio-engineered skin substrates- A review of the literature

Christodoulou, E.A. (research associate/student); Ogedegbe, C.
Hackensack University Health Network

INTRODUCTION: The prospects of tissue engineering, a broad and relatively new field of study, are appealing and beneficial. Tissue engineering ranges from the regeneration of skin, organ proliferation, and even treatment in musculoskeletal disorders and cancer. In the US, millions of burn injuries are reported annually; 70,000 of these are severe burn injuries requiring more advanced methods of treatment (skin substitutes and wound healing). Hence, tissue engineers aim to uncover the best methods for skin regeneration. The objective of this study is to understand the usage and efficacy of modern bio-engineered skin substrates compared to traditional autologous and allogeneic skin graft procedures.

METHODS: A relevant review of the literature was conducted accessing the National Center for Biotechnology Information and PLOS ONE databases. Thirty recent articles were initially identified, of which 20 were utilized.

RESULTS: As the review suggests, skin substitutes used cannot replace all functions that skin grafting can; however, future science may be crucial in generating skin substitutes with major advantages.

CONCLUSION: We hope this review may lead to a better understanding and greater awareness of bio-engineered skin substrates as a method of treating severe wounds and trauma.

SR04

A comparative review of dermal transplantation and bio-engineered skin substrates- a review of the literature

Herrera, H. (student); Christodoulou, E.A.; Ogedegbe, C.
Hackensack University Health Network

INTRODUCTION: The prospects of tissue engineering, a broad and relatively new field of study, are appealing and beneficial. Tissue engineering ranges from the regeneration of skin, organ proliferation, and even treatment in musculoskeletal disorders and cancer. In the US, millions of burn injuries are reported annually; 70,000 of these are severe burn injuries requiring more advanced methods of treatment (skin substitutes and wound healing). Hence, tissue engineers aim to uncover the best methods for skin regeneration. The objective of this study is to understand the usage and efficacy of modern bio-engineered skin substrates compared to traditional autologous and allogeneic skin graft procedures.

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SR05

Dental implant loss in patients with diabetes mellitus- a review of the literature

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INTRODUCTION: Diabetes Mellitus affects an estimated 29 million Americans. High glucose levels predispose Diabetics to bacterial and opportunistic infections via depression of immunity. Due to its limited collateral circulation, the dental pulp is one area at high risk of infection, leading to alveolar bone loss. The Dental implant or artificial tooth root, remain an effective standard of care in restoring missing teeth. Despite the long-term survival of dental implant treatments, implant failures still occur due to several factors such as poor glycemic control. We aimed to expand on existing knowledge on dental implant outcomes in diabetics and non-diabetics, as well as highlight other risk factors implicated in Dental implant failure.

METHODS: A search of relevant literature conducted on Medical Literature Analysis and Retrieval System Online, maintained by the United States National Library of Medicine NLM, identified over 77 articles, published over 15 years, of which 20 were utilized in the review. Inclusion criteria are articles with partially edentulous diabetics and non-diabetics who received dental implants.

RESULTS: We found that majority of studies suggested that implant survival was not significantly different between the two groups. Also, a poor glycemic state was a strong risk factor leading to dental failure in diabetics.

CONCLUSION: Successful dental implant can be accomplished in diabetics with tight blood glucose control, glycated hemoglobin (A1C) level less than 7 percent, in a similar manner as in non-diabetics. In summary, dental implants are safe and have high success rates in diabetics with strict blood glucose control. Prospective studies used in the review showed no link between diabetes and risk of implant failure. However, they were limited. Future prospective studies looking at the same would be meaningful.

SR06

Breaking dead: an evidence based history of ACLS medications

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Hackensack University Health Network

INTRODUCTION: In 2013 there were over 468,000 cardiac arrests in the United States. In 2015, the American Heart Association (AHA) presented its newly updated guidelines for cardiac arrest. The European Resuscitation Council guidelines were last updated in 2010. Over the years the algorithms for asystole, ventricular tachycardia (VT) and ventricular fibrillation (VF) have been through many changes. These algorithms are used on a regular basis and have been engrained in our minds starting at the earliest levels of training but how many times have we looked at the evidence behind the algorithm? In order to better understand the evidence and basis for the change of these guideline updates, we will take a look back at how the algorithms have changed and the studies that have lead to those changes.

METHODS: In order to find the underlying evidence which supports these recommendations, a comprehensive literature search was conducted utilizing Medline and PubMed (1966-2015). The search terms epinephrine, adrenalin, sodium bicarbonate, atropine and amiodarone and heart arrest were utilized individually and then combined. The results were then limited to adult patients, pharmacologic actions, and humans. Repeated citations were removed.

RESULTS: Through our preliminary literature review we have concluded that there are a few good studies that support each of the following conclusions: Epinephrine does improve return of spontaneous circulation (ROSC), increased epinephrine dosing indicates longer down time and therefore poorer neurological outcome, amiodarone improves survival to hospital admission only in refractory VT/VF arrests, sodium bicarbonate does not improve ROSC and, despite the fact that vasopressin is no longer included in the algorithms, there is new data that indicates the use of steroids, vasopressin and epinephrine leads to better ROSC rates and neurological outcomes.

DISCUSSION: This begs the question whether these conclusions should be incorporated into the standard of care or not. Looking ahead, future studies should include separating patients into pre-hospital and in-hospital cardiac arrests subsets, as well as the standardization of outcome measures to the patient's level of neurological function at discharge.

SR07

Self-assembled siRNA nanostructures and their applications in cancer gene therapy

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INTRODUCTION: Cancer figures among the leading causes of morbidity and mortality worldwide. Within the last decade or so, gene therapy approaches have made significant advances for the treatment of cancer. At the center of this gene therapy approach is RNAi nanotechnology. In this therapeutic approach, siRNAs possess the ability to self-assemble into higher-ordered nanostructures. This unrestricted ability presents an opportunity to incorporate multiple siRNAs within the same nanostructure formulation for enhancing the silencing of deadly oncogenes.

METHODS: In this presentation, we demonstrate a novel approach for the self-assembly of siRNAs into discrete nanostructure formulations. The siRNAs self-assembled into distinct circles, squares, triangles, rectangles, pentagons and hexagon shaped nanostructures.

RESULTS: The siRNAs self-assembled into distinct circles, squares, triangles, rectangles, pentagons and hexagons shaped nanostructures according to transmission electron microscopy (TEM). Furthermore, the anti-cancer activities of the siRNA nanostructures were evaluated in human endometrial cancer cells. The stable siRNA nanostructures triggered potent oncogene knockdown which translated into growth inhibition and cytotoxicity within the endometrial cancer cells. Interestingly, the self-assembled siRNAs retained template integrity in serum, which is believed to contribute to their extended duration of action.

CONCLUSION: These remarkable siRNA nanostructures thus encompass a new class of potent siRNAs that may be useful in screening important oncogenic targets as well as improving siRNA therapeutic efficacy in cancer.

SR08

A comprehensive review on the consumption and effects of caffeine

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Hackensack University Health Network

INTRODUCTION: Doctors and nurses depend most on coffee compared to other professionals to get through their shifts in the workplace. The objective of the study is to gain an understanding of the effects of caffeine and its consumption.

METHODS: Methods consisted of literature review of previous evidence to support our project.

RESULTS: It is known that caffeine is used as a mild central nervous system stimulant, which can lead to beneficial effects such as improved athletic performance, enhanced metabolism, and mood elevation. However evidence also suggests that long-term consumption of large doses of caffeine can lead to caffeine tolerance, caffeine withdrawal, and even caffeine addiction. Previous evidence from the literature review suffers that short-term reaction time will improve after coffee consumption, but that long-term coffee consumption will lead to sleep deprivation, particularly in younger subjects.

CONCLUSION: This research will lead to a better understanding of how caffeine particularly in the form of coffee affects a specific population.

SR09

Differences in outcomes of lower extremity motor recovery between right and left hemipheric stroke

Scarborough, J.D. (student); Castris, A.N.; Tilley, M.J.; Kubichek, E.G.; Preeti, P.M. Seton Hall University - Health Sciences Graduate Program

INTRODUCTION: Research regarding motor recovery post-stroke has predominantly focused on the upper extremities, while the amount of research regarding the lower extremities (LE) and motor recovery is currently limited. Previous research has determined that there are typical characteristics of patient presentation based on the lesion hemisphere. The purpose of this systematic review, is to detect trends in current research that impact motor recovery of the LE in patients with right versus left hemispheric stroke.

METHODS: CINAHL, American Association's Stroke Journal, Google Scholar, PubMed, Science Direct, and MEDLINE were the databases used for the systematic review. The search terms used included "motor recovery stroke", "lower extremity recovery post stroke", right/left hemispheric lesion post stroke", "gait post stroke", "standing balance post stroke", "quality of life measures post stroke", "quality of movement post stroke", "neglect symptoms post stroke", and "perceptual deficits post stroke". 59 articles were reviewed, out of which 26 were rejected. 33 articles were chosen after careful considerations that met the inclusion criteria for the systematic review.

RESULTS: Based on current literature, patients with left hemispheric stroke tend to exhibit greater recovery of functional abilities, including upright standing, balance, and gait when aphasia is not present. Left hemispheric stroke patients frequently experience difficulties with motor planning due to attention deficits. Patients with right hemispheric stroke commonly present with left neglect, affecting both motor and visuospatial perception. The addition of spatial deficits decreases LE motor recovery due to the additional decreased self-awareness.

CONCLUSION: Evidence suggests that lower extremity motor recovery varies based on hemispheric stroke. These trends may be used to guide treatment interventions and decrease length of healthcare services provided, while decreasing healthcare cost.

Clinical Vignettes

CV01

Autoimmune hepatitis presenting as acute liver failure

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INTRODUCTION: Autoimmune hepatitis (AIH) is an inflammatory liver disease that mainly affects females. It is characterized histologically by interface hepatitis, biochemically by increased aspartate and alanine aminotransferase levels, and serologically by the presence of autoantibodies and increased levels of immunoglobulin Seropositivity for smooth muscle and/or antinuclear antibodies defines type 1 AIH, while positivity for liver kidney microsomal type 1 antibodies defines type 2 AIH. The primary cause of AIH is unknown. The most commonly used initial treatment options are immunosuppressive therapy with either a combination of prednisone and azathioprine, a combination of budesonide and azathioprine, or high-dose prednisone monotherapy.

CASE REPORT: A 36 year old Hispanic female with no significant PMH presented to the ED with right upper quadrant discomfort and jaundice since a few weeks. Patient on further questioning reported clay colored stools and dark colored urine. Patient denied any recent travel, alcohol abuse, intravenous drug use, blood transfusions. Has been in a monogamous relationship with her husband since several years. Patient denied any changes in weight or appetite. On examination patient was afebrile with icteric sclera, and yellow tinged skin. Bloodwork revealed aspartate and alanine aminotransferase levels above 1000 with total bilirubin of 10, predominantly direct hyperbilirubinemia. Initial work up revealed normal hepatitis A,B,C serologies, negative ANA, anti-mitochondrial DNA, HIV non-reactive. Abdominal US revealed hepatic steatosis with normal gallbladder. Patient then underwent a liver biopsy which revealed findings consistent with autoimmune hepatitis. Anti- smooth muscle antibody later was found to be positive. Patient was started on pulse dose steroids with improvement in liver function. Patient was later discharged home on low dose oral prednisone.

DISCUSSION: AIH is a relatively rare but devastating disease, which progresses rapidly unless immunosuppressive treatment is started promptly. With appropriate treatment 80% of patients achieve remission and long-term survival. Hence, it is crucial to consider autoimmune hepatitis in the differential diagnosis when patients present with acute liver failure especially in young women with no other risk factors for liver disease.

CV02

Vegetation originating from patent foramen ovale- A Rare Occurrence

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INTRODUCTION: Echocardiography is important modality in diagnosis of infective endocarditis. It is class I recommendation to perform transthoracic echocardiography (TTE) in patients with suspected endocarditis and to perform transesophageal echo (TEE) when TTE is non-diagnostic and there is high index of suspicion. Vegetations seen in infective endocarditis generally originate from valves and in rare cases they can be entrapped in a patent foramen ovale (PFO), after it has dislodged. Any patient with this condition is at high risk of complications and death.

CASE REPORT: A 57 year old male presented with c/o fevers and chills for five days prior to presentation. Patient had a history of coronary artery disease status post bypass surgery, heart failure with preserved ejection fraction, end stage renal disease on hemodialysis and diabetes. Patient was brought to the hospital as he was weak and had a fever of 102 F. He denied any history of intravenous drug use. Physical exam showed erythema along the site of permacath with grade 2/6 early systolic murmur in aortic area. Patient was empirically started on broad spectrum antibiotics. Blood cultures grew Methacillin sensitive staphylococcus aureus (MSSA). As patient met criteria for endocarditis; he had a TTE which did not show any obvious valvular vegetation but clinical suspicion for endocarditis was high, hence TEE was performed. TEE showed 1.7cm x 0.8cm mobile echodensity attached to interatrial septum in left atrium, which appeared to be originating from foramen ovale. Mitral valve did not show any signs of inflammation. Differential diagnosis included thrombus, myxoma and vegetation. Later on, patient was transferred to a tertiary center where the mass was surgically removed and biopsied. Cytopathological analysis proved that it was a vegetation and not thrombus. Thereafter, patient's course was complicated by respiratory arrest due to flash pulmonary edema. Patient had a long and protracted course in the ICU but eventually family decided to make patient DNR/DNI and he was transferred to hospice.

DISCUSSION: In our literature review, there have been no reported cases describing vegetation that originated from patent foramen ovale. There is no general

consensus regarding treatment in such cases. The only available treatment is surgical removal of vegetation. Hopefully, this case will remind physicians to look for vegetations in unusual places.

CV03

Hepatic echinococcus granulosus- A case report

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INTRODUCTION: Echinococcosis is a frequently encountered serioushealth problem in countries where agriculture and animal husbandry is common. It is frequently seen in places with high population of stray dogs, especially in the Mediterranean region. This parasite's life cycle typically involves dogs (the definitive hosts) and sheep (the intermediate hosts). Echinococcal infection in humans occurs incidentally, when a person comes into close proximity to a reservoir host. It is associated with cystic lesions commonly observed in the liver (50%-80%), lung (5%-30%) and more rarely in bone, brain. Clinical presentation of the disease varies according to anatomic involvement. While it is usually diagnosed easily, the difficulty of treating the disease depends on the organs involved.

CASE REPORT: 73 year old white female with past medical history of Breast cancer s/p mastectomy in 2006 and hypothyroidism came to the emergency room with non-specific complaint of weakness. Patient was evaluated by the primary medical doctor same day who found her to be hypotensive, hence she was sent to the hospital. She denied any chest pain, palpitations, headache, fever or chills. She also had 3 episodes of non-bloody, watery and foul smelling diarrhea but denied any other gastrointestinal symptoms. In addition, she also complained of loss of appetite but no apparent weight loss. In social history patient denied any smoking, alcohol or drugs but stated that she had travelled to Turkey and Egypt in 2014. On admission, patient was was afebrile, tachycardic and blood pressure was running in 90's which responded to fluids. On physical exam; lungs were clear, heart sounds were normal, abdomen was soft and non-tender upon palpation and neurological exam was intact. Admission labs showed WBC - 33,000, Hemoglobin - 10, Alkaline phosphatase - 449, AST - 77, ALT - 92 and bilirubin of 1.4. Abdomen CT scan was performed as she was having symptoms of diarrhea and unusual symptoms which showed multiple liver cysts with septations. Working diagnosis of Hyatid cyst was made on the basis of patient's travel history and CAT scan findings. Serologies for Entamoebahistolyca and Echinococcus were sent, she was started on Albendazole and interventional radiology was consulted for possible drainage. Patient's white count improved. It was postulated that patient may have got infected with Echinococcus while she was travelling in Turkey or Egypt in 2014. Patient is being considered for percutaneous drainage of the hydatid cysts via PAIR (puncture, aspiration, injection of scolicidal agent, reaspiration) procedure.

DISCUSSION: Percutaneous drainage of the cysts is emerging as a useful adjunct to surgical excision. PAIR procedure is a newer percutaneous technique which is usually effective for definitive treatment of cysts that do not have daughter cysts. PAIR is performed under ultrasound or CT guidance. Percutaneous treatment is associated with risk for anaphylaxis. Albendazole should be administered for one month following percutaneous treatment.

CV04

An atypical presentation of Progressive Multifocal Leukoencephalopathy in a newly-diagnosed HIV patient

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INTRODUCTION: Progressive Multifocal Leukoencephalopathy (PML) is a severe CNS demyelinating disease caused by reactivation of the JC virus associated with significant mortality. It tends to remain dormant in the lymphatic organs or kidneys, and reactivates in profoundly immunosuppressed individuals and eventually inducing a lytic infection in the oligodendrocytes leading to demyelination. It has a 1-5% prevalence in the AIDS population. Its clinical manifestations can be in the context of classic PML, presenting with subacute neurologic deficits, or inflammatory PML, which occurs after HAART is initiated. We present a case of a young, newly-diagnosed HIV patient who presented with an acute and atypical picture of PML.

CASE REPORT: A 48 year old male with a past medical history of hypertension and Bell's palsy, who was treated with anti-virals and steroids, presented with a two week duration of memory decline, difficulty focusing while reading with eventual inability to recognize letters, along with difficulty driving and remembering basic instinctual directions to his house. He denied any visual changes, diplopia, hemianopia, dysarthria, or motor weakness. Patient had his last unprotected sexual encounter with a male almost 1 year ago and his last unprotected sexual encounter with a female was over 2 years ago. A computed tomographic imaging of head revealed non-enhancing white matter abnormalities regional to the right lateral ventricle and left occipital horn confirmed on magnetic resonance imaging. A rapid HIV test is reactive. Diagnostic lumbar puncture has no CSF pleocytosis,

with normal glucose and slight elevation in protein. Toxoplasma serology, cryptococcal antigen, and syphilis screening is negative. However, JCV DNA PCR is elevated qt 440,488 copies/ml. HIV viral load has 85,476 copies, with CD4 count of 41. Prophylactic trimethoprim-sulfa and azithromycin was initiated, as well as tenofovir/emtricitabine along with dolutegravir based on resistance testing.

DISCUSSION: The course of PML is fatal. Diagnosis is established by CSF PCR, with 72-92% sensitivity and 92-100% specificity. Brain biopsy, with 64-96% sensitivity and 100% specificity, remains the gold standard for diagnosis and is indicated if PCR is negative on more than one occasion. The approach to treatment involves restoring the host adaptive immune response, which may be accompanied by immune reconstitution inflammatory syndrome (IRIS). One year survival rate with treatment is 50% vs 10% without it.

CV05

Chorea in late-onset Huntington's Disease without family history

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INTRODUCTION: Huntington's Disease (HD) is an autosomal dominant disorder with variability in clinical manifestations and age at which symptoms present. Mean age of onset is 35-44 years. It is caused by mutations in the Huntington (HTT) gene causing CAG segments to be repeated. The number of repeats determine if a person will develop HD. A larger number of repeat associates with an earlier onset of the disease, a phenomenon known as "anticipation. However, there is a "gray zone" where the predictability of developing HD is unclear. This is due to the presence of intermediate alleles which have between 27-35 repeats, and will not develop HD themselves but carry a risk of it developing in their children. We present a case of a Pakistani male who presents with late-onset HD without a family history of HD.

CASE REPORT: A 59 year old Pakistani male with past history significant for involuntary admission to a psychiatric facility in 2011 for agitation and property damage. He was admitted to our hospital when found wandering on the streets in Elizabeth, NJ. His exam on admission revealed fragmented speech with difficulty following commands. He had choreoform movements of his extremities, more pronounced in the upper extremities. He had an unsteady gait with a prancing quality. He did not exhibit oro-buccal-lingual stereotypy. He vital signs were stable. His ethanol level and UDS was negative. The only abnormality in his lab was a mildly elevated CPK. CT head revealed no evidence of intracranial pathology with ventricular size and sulci normal for age. MRI showed mild-moderate diffuse cerebral volume loss, normal for patient's age. HIV, RPR and ANA were negative. His ECHO was done to look for any valvular regurgitation in light of possible Syndenham chorea which may rarely manifest in older individuals and came back normal. Possibility of Tardive Dyskinesia was also entertained given his history of psychiatric hospitalization and use of anti-psychotics. Pt was on a Dopamine antagonist and an SSRI in 2011 but the duration is unknown. A detailed family history was taken from the patient's brother but failed to reveal any similar manifestations in his parents or siblings. Samples were sent for Huntington's Disease and showed 43 and 13 CAG repeats, with the 43 alleles being fully penetrant. Neurology was consulted in the meantime and started Haldol which resulted in improvement of patient's chorea.

DISCUSSION: Huntington's Disease is a neurodegenerative disorder caused by a mutation on Chromosome 4p leading to CAG repeat expansion in the Huntingtin gene. There have been cases of HD in patients without any family history, possibly related to CAG repeat instability of intermediate alleles causing new mutations. Intermediate alleles don't confer to the HD phenotype but are susceptible to paternal CAG repeat instability can expand into the HD range on transmission to the next generation.

CV06

Pneumonia masquerading as a pulmonary malignancy

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INTRODUCTION: Several pulmonary disease processes identified on imaging studies may mimic a primary malignant process. It may be particularly challenging to differentiate infectious, inflammatory, and malignant conditions in patients with a high risk history such as tobacco use and occupational exposures. 'Round pneumonia' is a term referring to well-defined spherical or oval-shaped opacities identified on imaging. The causative agent is most commonly Streptococcus pneumoniae. Although more prevalent in the pediatric population, the condition has been reported in adults with a mean age of 40 years. Heightened awareness is needed as it may be difficult to distinguish from a malignancy. We present a case of round pneumonia in an adult patient with radiographic findings suggestive of a pulmonary neoplasm.

CASE REPORT: A 59 year old male with a history of hypertension and a 15 pack-year smoking history pre-

sented with a two-week history of reported fever up to 103 F, rigors and a productive cough with green-yellow sputum. He also reported a three-day duration of right sided chest pain exacerbated with movement and deep inspiration. He denied hemoptysis, weight loss, night sweats, recent travel history, recent hospitalizations or sick contacts. His occupation involves working as a boiler operator for the past 35 years and intermittent work at a freezer plant over four years prior to presentation. His family history is significant for his mother who passed away due to metastatic colon cancer at the age of 71. Patient was tachycardic and tachypneic on presentation but afebrile with oxygen saturation of 96% on room air. Lung exam was remarkable for rales on inspiration over the right lower lobe with noted dyspnea on inspiration. He had fair air entry in bilateral lung fields. The remainder of his physical exam was unremarkable. Laboratory findings revealed a leukocytosis of 11.9 x 10^3/μL without a left shift. A non-contrast CT scan of his chest demonstrated a 1.2 cm right middle lobe nodule that was spiculated, as well as focal pleural thickening in the right lateral hemithorax and a small right pleural effusion with shotty mediastinal lymph nodes. He was treated with intravenous Levaquin for four days over the hospital stay. His sputum, blood and urinary cultures remained negative as well as urine Pneumococcal and Legionella antigen. Patient underwent a CT-guided biopsy, however, it was noted at the time of biopsy that the nodule had already shrunk in size, which was on the fourth day of the hospital stay. Biopsy of the lesion failed to show evidence of malignancy. Pathology reported inflammatory cells. Patient demonstrated clinical improvement on the third day of hospitalization and was discharged on a course of oral antibiotics with instructions to repeat a non-contrast chest CT scan four weeks post discharge.

DISCUSSION: Round pneumonia commonly affects the lower lobes with a wide variability in radiologic findings. The borders may be smooth or lobulated and spicules may be seen on CT scan with pleural thickening and satellite lesions. It can be difficult to distinguish from malignancy without invasive diagnostic procedures such as biopsy or bronchoscopy. Thus, clinicians should be astute regarding this uncommon radiographic finding of pneumonia. Vigilant follow up for resolution of image findings is imperative.

CV07

The IGSF1 Deficiency Syndrome: An unusual case

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INTRODUCTION: IGSF1 deficiency has been recently found to be a novel cause of X-linked central hypothyroidism, macroorchidism and delayed puberty.

CASE REPORT: We present a family in which the proband was diagnosed with congenital central hypothyroidism by neonatal screening and treated accordingly. Further pituitary examination revealed an unmeasurable prolactin level, normal IGF-1, normal cortisol and no abnormalities of the pituitary on MRI. The patient exhibited normal growth and bone age. However, the patient had excessive weight gain and remarkable testicular enlargement (5-6cc). The enlargement was noticed first at 3.6 years of age and the macroorchidism was present at least until his last evaluation at age 12 years. At 6.3 years old, the patient still had a pre-pubertal LHRH stimulation and a pubertal LHRH was first observed at 10.3 years old, when his testicular size was 10-12 cc. The proband's brother was referred for short stature at age 13 years and he was found to have congenital central hypothyroidism with a normal prolactin, normal GH secretion and low testosterone level for a testicular size of 25-28cc (disharmonious pubertal development). His BMI was normal and besides poor growth, he did not have any of the manifestations of long standing untreated hypothyroidism. The family was referred for genetic evaluation, which revealed that the index patient, his brother, mother and maternal grandfather carry a nonsense mutation in the IGSF1 gene, specifically c.3411_3412del, p.Tyr1137*.

DISCUSSION: We present here a unique case of a family with IGSF1 deficiency. The proband presented with macroorchidism at an early age, which has not been previously documented. Also, other family members had congenital central hypothyroidism and did not present with classical manifestations of long standing hypothyroidism. Identification of this constellation of manifestations leading to mutational analysis of the IGSF1 gene is key. Further investigations into this family are still ongoing.

CV08

Use of conventional and non-conventional management strategies in the management of Critical Asthma Syndrome (CAS)

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INTRODUCTION: Critical Asthma Syndrome (CAS) is the most severe form of asthma exacerbations. CAS includes acute severe asthma, refractory asthma, status asthmaticus, and near-fatal asthma where the overwhelming work of breathing leads to respiratory arrest and death from hypoxia or related complications. As mortality rate of critically ill asthmatics range between 10% to 25%; management of CAS is often difficult and needs to be done in a prompt timely multidisciplinary manner where there is little room for error. We present a case of a 28 year old African-American male who presented to our hospital with CAS complicated with pneumomediastinum and bilateral pneumothoraces.

CASE REPORT: A 28 year old African-American male with past medical history of poorly controlled asthma diagnosed in childhood with multiple prior episodes of status asthmaticus requiring intubation complicated by pneumothorax and chest tube placements. Patient reported that he has asthma symptoms with difficulty breathing, chest tightness, and wheezing almost daily. He, however, reported using only Albuterol rescue inhaler and if needed, Albuterol nebulizer at home. In ER, patient failed multiple Albuterol-Ipratropium nebulizer treatments along with supplemental oxygen, IV methylprednisolone, and Magnesium Sulfate. His peak flow was noted to be persistently low despite these treatments. ABG showed hypoxic hypercapnic respiratory failure. Chest x-ray showed pneumomediastinum and left sided subcutaneous emphysema. Cardiothoracic surgery and pulmonology were immediately contacted. Patient was admitted to ICU and was subsequently intubated. Bilateral chest tubes were inserted prophylactically for suspected progression of pneumomediastinum and subcutaneous emphysema. Because of the patient's severe hypercapnic respiratory, IV Theophylline and subcutaneous Terbutaline were added to high dose methylprednisolone and frequent Albuterol-Ipratropium therapy. Heavy sedation with multiple agents were gradually added. Despite the above measures, the patient's acidosis continued to worsen with pH reaching critical values of 7.0. A paralyzing agent along with multiple adjustments of ventilator setting including pressure-controlled and lastly inverse ratio ventilation were done. After more than 24 hours of aggressive therapy, patient's respiratory status started to improve. Patient was eventually extubated and chest tubes were removed after a few days.

DISCUSSION: In this case we have shown that the prompt intervention and management of CAS has significantly altered patient outcome. We highlighted the use of both conventional and non-conventional strategies in management of CAS. In addition, in this case, we emphasizes on a multidisciplinary approach to the management of critically ill asthmatics with impending respiratory failure.

CV09

Crystal-induced nephropathy leading to renal replacement Therapy caused by Atazanavir

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INTRODUCTION: Atazanavir is a potent protease inhibitor commonly used as part of highly active antiretroviral therapy. In <2% of cases, adverse reactions including cholelithiasis, interstitial nephritis, and nephrolithiasis have been reported. An unusual complication in the form of crystal-induced nephropathy is even rarer. In this report, we present a case of an HIV seropositive man who developed progressive renal dysfunction secondary to intra-tubular crystalline deposition from atazanavir therapy, leading to hemodialysis. Prevention with adequate hydration remains the gold standard intervention so far. If the kidney function does not improve after cessation of Atazanavir, trial of steroids has been anecdotally reported.

CASE REPORT: A 53 year old African-American man with remote history of trauma-related right sided nephrectomy has underlying HIV, Hepatitis B, and Hepatitis C co-infections. He has been virologically suppressed with decent immunologic response while on tenofovir/emtricitabine, and ritonavir-boosted atazanavir. He presented to the hospital with symptoms of uremia associated with azotemia, high anion gap metabolic acidosis, alkaline urine, and non-nephrotic range proteinuria. Urgent hemodialysis was initiated. Serum kappa, lambda light chain levels, and □2 microglobulin were elevated. Serum complement levels were normal, while myeloperoxidase antibody, proteinase-3 antibody, cryoglobulins, and glomerular basement membrane antibody were negative. Renal ultrasound showed no hydronephrosis but with complex cystic lesions in the left kidney. Eventually, a percutaneous renal biopsy did not show evidence of kappa, lambda, albumin and fibrinogen deposits; no immunoglobulin or complement deposits were detected. However, it showed acute and chronic tubulo-interstitial nephritis with giant cell reaction and abundant intra-tubular, weakly polarizable crystalline deposits secondary to Atazanavir. There is also

evidence of moderate-severe tubulo-interstitial scarring. Atazanavir has been switched to Darunavir as he developed cutaneous adverse effect from integrase inhibitors.

DISCUSSION: Based on literature review, only 2 cases were reported to manifest as acute kidney injury presenting as acute interstitial nephritis secondary to a hypersensitivity-like reaction, and as in our case, intra-tubular crystalline deposition. Potential risk factors could include high Atazanavir plasma level, alkaline urine, and pre-existing chronic kidney, and liver diseases. Prior nephrectomy in this scenario may have contributed, and the role of Tenofovir-based backbone regimen is not clear.

CV10

Cushing's Disease: A rare cause of a common complaint

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INTRODUCTION: Menstrual irregularities are a common complaint, occurring in 10-15% of reproductive age females. They can occur from a variety of causes such as changes in medications, changes in weight, or stress (both physical and emotional). They may also occur from common endocrine disorders such as hyperprolactinemia, thyroid dysfunction and polycystic ovarian syndrome. A rare cause for menstrual irregularitiesis excessive endogenous cortisol production; here we present a case of irregular menses due to Cushing's disease.

CASE REPORT: A 39 year old Hispanic female presented to our medical clinic with chief complaints of irregular menses and infertility for the past few years. She had a 12 year old son whom she conceived without difficulty and desired another child. She had no previous significant medical or surgical history and was not on any medications. On review of symptoms she also reported unintentional weight gain, particularly in her abdomen. Her physical exam was remarkable for central obesity, abdominal striae, buffalo hump and hirsutism. Laboratory testing revealed a negative hCG, elevated testosterone of 71 ng/dl (2-45) and elevated 24 hr urine cortisol of 173 mcg (4-50). A simultaneous morning ACTH and cortisol were 133 pg/mL (6-50) and 22 mcg/dL (4-20) respectively. 1mg dexamethasone testing was done and her cortisol failed to suppress (2.1 mcg/dl). A pituitary MRI with contrast revealed a 4mm adenoma and she was referred to neurosurgery for further management and resection.

DISCUSSION: Although causes for menstrual irregularities are numerous, careful history and good physical exam can pinpoint the diagnosis. Our patient presented with classic physical findings of hypercortisolism and ACTH-dependent Cushing's disease was confirmed with testing. Early recognition and treatment is vital as they are at high risk for morbidity and mortality.

CV11

Mechanical circulatory support with the Impella 5.0 left ventricular assisted device in a patient with cardiogenic shock

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INTRODUCTION: Over the past 2 decades, innovation in the realm of mechanical ventricular assist devices (VADs) has altered the management of cardiogenic shock (CS). Percutaneous VADs (PVADs) allow for emergent and effective ventricular unloading while providing systemic perfusion pressure to reverse end-organ dysfunction. Cardiogenic shock refractory to standard therapy is accompanied with high mortality. Percutaneous LVAD may provide a survival benefit for these patients. We describe our experience with the Impella 5.0 device used in the setting of refractory cardiogenic shock.

CASE REPORT: A 69 years old African-American male with past medical history of Hypertension, COPD and Non-Ischemic Cardiomyopathy with ejection fraction 30-35% presented to Emergency Department with sudden onset of chest pain and hypotension. A diagnosis of cardiogenic shock secondary to acute anteroseptal STEMI was made and the patient underwent percutaneous coronary intervention with insertion of a bare metal stent into left anterior descending artery. As the patient was hemodynamically unstable, an intra-aortic balloon pump was placed and was vasopressors were instituted. As his condition deteriorated, patient underwent insertion of an Impella 5.0 ventricular assist device after failure of medical therapy and mechanical support. Intra-aortic balloon pump was removed and pressors were slowly titrated down. The patient improved significantly over a period of one week and Impella was removed. After a prolonged intensive care unit stay requiring temporary hemodialysis, the patient recovered sufficiently to tolerate device explant, was transferred to telemetry unit and subsequently discharged home.

DISCUSSION: In patients presenting with cardiogenic shock refractory to inotropic support, mechanical circulatory device impella 5.0 has shown consistent hemodynamic improvement and effectively functions as bridge to further destination therapy modality. We present a patient with refractory cardiogenic shock who was managed effectively with Impella 5.0 as bridge to recovery.

CV12

Acute intermittent porphyria presenting with posterior reversible encephalopathy syndrome and periodic lateralized epileptiform discharges on CEEG

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INTRODUCTION: Acute intermittent porphyria is an autosomal dominant disorder, which results from partial deficiency of porphyrobilinogen (PBG) deaminase, an enzyme of the heme biosynthesis pathway. The concomitant presentation of posterior reversible encephalopathy syndrome (PRES) and LPDs has been described mostly in patients with eclampsia. We report a patient with abdominal pain, hypertension, seizures, and encephalopathy associated with PRES on brain MRI and lateralized periodic discharges (LPDs, also termed PLEDs) on continuous EEG monitoring (CEE

CASE REPORT: This is a 20 year-old female with severe recurrent abdominal pain, who was admitted with hypertension (BP = 148/118), tachycardia (HR = 120), and two generalized tonic-clonic seizures without recovery of consciousness between them. Patient was profoundly lethargic and assumed a fetal position in bed. There was left lower extremity clonus and left-sided Babinski on neurological examination. The CEEG showed both LPDs (Fig. 2) plus recurrent electrographic seizures over the right temporo-parietal occipital region, and the brain MRI was suggestive of PRES (Fig. 2). She was admitted to the ICU for tight blood pressure control and treatment with levetiracetam, acyclovir, anti-hypertensive, and antibiotics. The CSF was unremarkable and comprehensive CSF studies were negative, including PCR for herpes simplex virus. Seizures completely subsided with treatment, but not the encephalopathy. Acyclovir was discontinued after CSF and brain MR imaging results and high dose steroids with methylprednisolone were started, thinking with the possibility of immunological and inflammatory etiologies. There was a progressive improvement of her mental status within the next days. Because of history of recurrent and severe abdominal pain associated with hypertension, tachycardia and seizures, we requested rapid urine PBG, urophorphyrin, and serum porphyrin, which were highly elevated as follows: Urine PBG was 177.4 mol/L (ref. 0 - 8.8), Serum porphyrin was 58 NMol/L (ref. 0 - 15), and Uroporphyrin was 110 UMol/mol (ref. 0 - 4). When these results were back, patient was fully alert and without any focal neurological deficits. Only mild abdominal pain persisted, which was resolved in less than 24 hours with carbohydrate (glucose) loading and high caloric diet. It was felt that intravenous hemin was not necessary at this time. She was then discharged and sent to a porphyria center as outpatient. A follow-up brain MRI showed remarkable improvement.

DISCUSSION: We report an unusual case of acute intermittent porphyria presenting with PRES and LPDs, which led to additional complexity in the differential diagnosis and management of this patient. The neurological manifestations of acute intermittent porphyria are potentially life threatening. In addition, several antiepileptic drugs, including phenytoin, may trigger or worse an acute attack. Fortunately, our patient, who had no definite diagnosis at presentation, received levetiracetam in t

CV13

Creativity of medicine for surgical success

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INTRODUCTION: Pheochromocytoma, a rare catecholamine-secreting tumor from chromaffin cells of the adrenal medulla has an annual incidence of 0.8 per 100,000 person years. The multiple presentations of pheochromocytoma make it a challenging diagnosis. This case illustrates an atypical presentation and how creative and effective medical management can be for surgical success.

CASE REPORT: A 56-year-old male patient, Jehovah's Witness, presented with an acute left flank pain radiating to the chest while sleeping. The patient's blood pressure (BP) was 110/70mmHg, heart rate of 112 bpm and diaphoretic. Hemoglobin (Hb) was 15.1 g/dl. EKG was normal but cardiac enzymes were elevated. Cardiac catheterization for ACS evaluation showed normal coronaries with severe left ventricular dysfunction and ejection fraction (EF) of 20 %. Twelve hours later the patient developed hypovolemic shock requiring vasopressor support. Assessing for plausible causes of shock, a CT abdomen revealed a large left retroperitoneal hematoma and a mass (12x10x13 cm) shifting the left kidney into the pelvis. Hb repeated was 7.4 g/dl. A tagged cell study indicated active bleeding in the retroperitoneal space from the left middle adrenal artery, which was interventionally embolized. Multiple lab studies were drawn including urine and plasma metanephrines, which were double the normal levels interpreted as an appropriate stress response. When the patient regained hemodynamic stability, urine and plasma metanephrines were 10 times higher, suggesting pheochromocytoma. Urine Metanephrine: 4153 (90-315), Normetanephrine: 4051 (122-676). Therefore, the patient was medically man-

aged in a bloodless approach (no blood transfusions) aiming at a Hb goal of 11 g/dl for resection of a presumed pheochromocytoma. He improved clinically and his EF increased to 60%. Pre-operative treatment consisted mainly of metyrosine, volume repletion with normal saline, iron sucrose IV, Procrit and hydrocortisone. Alpha blocker (doxazosin 1mg daily) was not tolerated due to episodes of severe orthostatic hypotension. After 14 days of pre-op treatment, the mass was resected, confirmed to be a pheochromocytoma by the pathology report. While the definitive treatment for pheochromocytoma is surgical excision, pharmacologic therapy is necessary to reduce the risk of potentially fatal intraoperative hypertensive crisis. Metyrosine is a competitive inhibitor of tyrosine hydroxylase, the rate-limiting step of catecholamine biosynthesis, which significantly decreases catecholamine levels. The multiple presentations of pheochromocytoma make it a challenging diagnosis. This case illustrates an atypical presentation and how creative and effective medical management can be for surgical success.

DISCUSSION: Tumor manipulation and exposure to certain medications-opioids and anesthetics-may precipitate tremendous catecholamine release from the tumor, inciting paradoxical cycles of hypertension and hypotension. Pretreatment begins 1-2 weeks prior to surgery to gain adequate blood pressure control and replete intravascular volume. Metyrosine has been used as a second line agent in cases of inadequate α- or β-blockade or in those with severe orthostatic hypotension.

CV14

Where two channels meet

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INTRODUCTION: This case illustrates tubulointerstitial nephritis as an extra-intestinal manifestation of IBD. Since the progressive decline of the patient's renal function occurred prior to the start of 5-ASA therapy, it is reasonable to conclude that the main precipitating factor of his severe interstitial nephritis was IBD; connecting two channels in a single inflammatory disease.

CASE REPORT: A 32-year-old male patient, Jehovah's Witness, of no known medical history presented with a 3-month duration of intermittent bloody diarrhea, fatigue and progressive 14 kg weight loss. He denied any fever, chills, night sweats, abdominal pain, rash, or travel outside the state. Symptoms were heralded by a routine lab workup where he was found to have hemoglobin of 6.8 g/dL and creatinine of 7.3 mg/dL. He was admitted with a preliminary diagnosis of chronic diarrhea and acute kidney injury secondary to prerenal azotemia. An extensive lab workup including urine and stool studies, renal ultrasound and serologic markers were done to evaluate his diarrhea and renal failure. Renal ultrasound revealed normal size kidneys and no hydronephrosis. His renal and gastroenterology exams, including ANCA antibodies, anti-GBM, HIV, serum complement levels, hepatitis panel, C. diff toxins, H. pylori serology and celiac panel were all negative. He also underwent esophagogastroduodenoscopy and colonoscopy. Pathology from the small and large bowel biopsy were notable for mild acute ileitis with non-necrotizing granulomata and active moderate chronic colitis suggestive of inflammatory bowel disease (IBD), Crohn's. By the fifth hospital day, his kidney function continued to deteriorate despite aggressive fluid hydration and a bloodless approach to correct his anemia. His creatinine continued to rise from 7.3 to 8.2 mg/dL. At that point, he underwent a renal core biopsy revealing chronic moderate to severe active interstitial nephritis, moderate to severe tubular atrophy and interstitial fibrosis. The patient was started on mesalamine and prednisone for treatment of Crohn's disease and concomitant tubulointerstitial nephritis. Three months after treatment initiation he had significant improvement of his kidney function and no flare-ups.

DISCUSSION: A variety of conditions are associated with IBD, also known as extra-intestinal manifestations. Common findings include uveitis, hepatobiliary, pulmonary and skin manifestations. Renal disease is not a well reported extra-intestinal finding. Some case reports have highlighted this connection; however it remains important to differentiate if the renal manifestation developed as an adverse effect to 5-ASA compound or from IBD. It is essential to differentiate whether interstitial nephritis is subtending from IBD or its therapy, as interstitial nephritis etiologies include multiple drugs such as NAIDS and numerous systemic diseases.

CV15

Paget-Schroetter's Syndrome: A case of upper extremity DVT

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INTRODUCTION: Deep vein thromboses (DVT) and their sequelae are commonly included in a differential diagnosis in the emergency department. Effort-induced thrombosis is not a common disease process and could be easily missed if the provider is unfamiliar with its pathogenesis and presentation. We present here the case of a middle-aged male with no risk factors for DVT that presented with swelling in his upper extremity.

CASE REPORT: The patient is a 49 year old male with no past medical history who presented to our emergency department with 3 weeks of left upper extremity swelling. He was triaged to the prompt care area for our lower acuity, ambulatory patients. The patient had recently started a new exercise regimen which included lifting weights. He had been working with a personal trainer who noticed the swelling in his left arm and recommended he be evaluated. Our patient was initially evaluated at a free-standing urgent care center and had been sent to the ED to rule out DVT. The patient reported that he felt a stretching sensation in his arm and a tightness with movement. He denied any acute trauma to the arm or hearing or feeling any pop that could indicate transient dislocation. He denied chest pain, shortness of breath, abdominal pain, change in sensation, decreased range of motion, palpitations or fever, recent surgeries or history of blood clots. His physical exam was normal except for mild swelling in the region of the left bicep. There was no change in skin color or pitting edema. A doppler ultrasound was ordered and revealed a nearly occlusive echolucent thrombus in the infraclavicular subclavian and proximal brachial veins with decreased flow. The ultrasound report indicated that the axillary vein, basilic vein from proximal upper arm to mid forearm and both the radial and ulnar veins in the upper arm were non compressible with occlusive echolucent thrombus and flow was completely absent in the axillary vein. . He was started on heparin and had an AngioJet thrombectomy; venogram showed significant clot burden remaining and the patient required placement of an EKOS catheter, which is an ultrasound-accelerated catheter for alteplase infusion. He was scheduled for outpatient resection of his first rib but was sent to the Emergency Department with arm swelling despite anticoagulation three weeks later and was admitted to have the surgery done urgently. He tolerated the rib resection well and was discharged to home on Xarelto after uncomplicated hospital course.

DISCUSSION: Upper extremity deep venous thromboses (UEDVT) represent about 4-10% of all deep venous thromboses. Compared to thromboses in the lower extremities, UEDVT patients have relatively fewer complications. Effort thrombosis, or Paget-Schroetter Syndrome, occurs due to repetitive microtrauma to the endothelium of the subclavian vein leading to thrombus formation in the axillary and subclavian veins. There are different proposed mechanisms for this entity including exercise and anatomic abnormality.

CV16

Wellens' sign in a patient presenting with chest pain

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INTRODUCTION: Wellens' sign is an electrocardiogram (ECG) abnormality, which is characterized by deeply inverted or biphasic T waves in leads V2-V3. It is highly specific for a critical stenosis of the left anterior descending (LAD) artery. Individuals who manifest this sign are at a high risk for anterior wall myocardial infarction (MI).

CASE REPORT: We present the case of a 52-year-old African-American male with a past medical history of hypertension, hepatitis C, intravenous heroin abuse who presented to the emergency department (ED) with a two-hour history of chest pain. As per the patients report pain started at rest while he was lying in bed. He characterizes his pain as 10/10, pounding, sharp, and located in the substernal area and radiating to the left side of the chest. He reports accompanying left sided neck stiffness, dizziness and mild shortness of breath, with no jaw pain, radiation of pain to his left arm, nausea, vomiting, paroxysmal nocturnal dyspnea, orthopnea, or lower extremity swelling. He denied any previous episode of chest pain. He did note that the pain was slightly relieved with 325mg aspirin and 0.4mg nitroglycerin. Additionally the patient admitted to using cocaine four hours prior to the onset of chest pain and drinking alcohol the night prior to admission. Initially, our patient was found to be hypertensive in the ED with a blood pressure of 242/155. On physical exam no JVD was noted, heart rate and rhythm were regular with no murmurs. A bounding point of maximal impulse was palpable at the fifth left intercostal space. ECG showed normal sinus rhythm with a heart rate of 72 beats per minute and biphasic T waves in leads V2-V4, which were new in comparison to prior studies, with no noted ST changes. Cardiac enzymes were unremarkable. The patient received a single 10mg intravenous dose of hydralazine and was started on clonidine 0.2mg daily, isosorbide mononitrate 30mg daily, aspirin 325mg daily, atorvastatin 80mg daily, and enoxaparin 60mg twice daily. Additionally a loading dose of clopidogrel 300mg with subsequent 75mg daily dosing was administered. Cardiology was consulted and due to the ECG changes which were suggestive of Wellens' sign, pointing toward LAD occlusion. He was scheduled for cardiac catheterization. However, the patient signed out of the hospital against medical advice before receiving the catheterization. Despite persistent readmissions with similar complaints, he has con-

tinuously signed out against medical advice prior to cardiac catheterization.

DISCUSSION: This case illustrates the utility and importance of electrocardiographic evaluation in patients presenting with chest pain. The recognition of specific T wave changes known as "Wellens' Sign" is crucial to the initiation of appropriate therapy and intervention for this rare ECG finding as it is suggestive of an LAD occlusion. In light of the significant morbidity and mortality associated with occlusion of the LAD it is important for physicians to be aware of this rare ECG manifestation.

CV17

Lipids emulsion in the management of inadvertent intrathecal administration of Bupivacaine/ Ropivacaine in the ED

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INTRODUCTION: Bupivacaine and ropivacaine are frequently used for interscalene nerve blocks, which are generally well tolerated, in rare occasions may be associated with cardiovascular collapse and/or paralysis. Although the treatment is mostly supportive, we report an unusual case of administering intravenous lipid emulsion (ILE) as part of resuscitative effort to hasten neurological recovery.

CASE REPORT: A 43 year old male (83kg) presented to the Adult Emergency Department for evaluation of acute respiratory arrest. Prior to arrival, the patient was at an outpatient surgical center being prepared for a right shoulder arthroscopic surgery under regional anesthesia. The anesthesiologist injected 10 mL of bupivacaine and 30 mL of ropivacaine while attempting to perform an interscalene block. Soon after, the patient complained of difficulty breathing and developed complete paralysis and respiratory arrest requiring emergent endotracheal intubation prior to hospital arrival. The patient immediately received 2 liters of normal saline and a dopamine infusion was initiated due to persistent bradycardia and hypotension. About an hour and a half after presentation, the decision was made to administer 20% ILE, with a bolus infusion of 1.5 ml/kg bolus followed by an infusion of 125 mL given over 2 hours (0.013 mL/kg/min). Approximately 30 minutes after the lipid emulsion bolus was given; the patient began to regain brainstem reflexes and eye movement. An hour after ILE infusion, patient was able to communicate by writing down responses to questions and an hour and a half later, the patient had full recovery and was extubated. The patient recovered completely without any evidence of neurological sequelae and discharged 30 hours after presentation

DISCUSSION: To our knowledge, this is the first case report documenting ILE for the reversal of intrathecal administered local anesthetics. In light of these uncertainties, it is reasonable to administer ILE for reversal of local anesthetic-induced toxicity. In summary, intrathecal anesthetic toxicity may be reversed with ILE similar to intravascular administration.

CV18

Klebsiella pneumoniae bacteremia: A diagnostic challenge

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INTRODUCTION: Nasopharyngeal masses are well described in the literature, with a majority diagnosed as malignant nasopharyngeal carcinoma, specifically in the adult population. Much rarer are benign masses of the nasopharynx, mostly described in children as nasopharyngeal angiofibromas. *Klebsiella pneumoniae* is a gram negative rod bacterium commonly implicated in aspiration pneumonia, urinary tract infections, biliary tract infections, and surgical wound sites. It has also been noted to colonize the nasopharynx and cause deep neck infections and abscesses. We present a very interesting case of *Klebsiella pneumoniae* bacteremia caused by a benign hyperplastic nasopharyngeal mass in an alcoholic with newly diagnosed type 2 diabetes mellitus.

CASE REPORT: A 61-year-old Polish gentleman with no known medical co-morbidity presented with worsening headache, malaise, cough, and altered mental status over five days. He was seen at two different institutions for the same complaints, and was treated with NSAIDs, steroids, and muscle relaxants. On presentation, he was lethargic, tachycardic, and febrile. Diagnostic tests revealed leukocytosis with left shift, hyperglycemia, and hyponatremia. A glycated hemoglobin is 12.3%. A urinalysis has no pyuria, or bacteriuria, while a chest radiograph did not show any parenchymal abnormality. A non-contrast computed tomographic imaging of the head showed mild sinus disease, without acute intracranial pathology. A diagnostic lumbar puncture had revealed 42 wbc's with polymorphonuclear cell predominance, 1300 rbc, and relatively decreased glucose level in comparison to blood level. He was empirically treated as a case of bacterial meningitis; however, CSF culture was sterile. Blood cultures grew *Klebsiella pneumoniae*. His course was complicated by ventilator dependent respiratory failure, acute kidney injury felt to be related to acute tubular necrosis, and deep venous thrombosis with pulmonary embolism. A CT scan of sinus and neck disclosed a left-sided nasopharyngeal mass

extending to the level of the oropharynx. Multiple endoscopic biopsies were consistent with acute inflammatory tissues but no evident malignancy. He has received a course of ceftriaxone, and eventually transitioned to enteral levofloxacin, with repeat negative blood cultures. The patient eventually improved, was taken off the ventilator and tracheostomy, and was discharged in stable condition.

DISCUSSION: *Klebsiella pneumoniae* causes a number of infections, including meningitis and deep neck abscesses, especially in diabetics and alcoholics. It also colonizes the nasopharynx. There are no documented cases of benign nasopharyngeal masses causing *Klebsiella bacteremia.* Translocation of Klebsiella may have caused transient neurological sequelae and possible meningitis which cleared with antibiotics. Co-morbidities and known reservoirs of bacteria need to be considered when treating similar patients.

CV19

Carbon monoxide poisoning: A case report

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INTRODUCTION: Carbon monoxide (CO), a by-product of incomplete combustion, is a colorless, odorless gas. In 1857 the physiologist Claude Bernard described that CO produces hypoxia in tissues by binding with hemoglobin to form carboxyhemoglobin (COHb). CO shifts the oxyhemoglobin curve to the left, which reduces tissue PaO2. CO poisoning causes tissue hypoxia and direct cellular changes involving immunological or inflammatory damage by a variety of mechanisms. Diagnosis requires a history of recent CO exposure, the presence of symptoms of CO poisoning (headache, nausea, breathlessness, collapse, dizziness and loss of consciousness) and demonstration of elevated COHb level. Management includes oxygen via mask, intubation, or hyperbaric chamber, Home appliances such as ovens are potential sources of CO.

CASE REPORT: Ambulance arrived with a 48 year old female with altered mental status. When paramedics arrived the patient and her children were conscious, but confused, in the front yard. The gas utility was called by the patient's oldest son. The natural gas supplier was on the scene when they arrived taking CO readings which were on average 100 ppm in the house and 700 ppm in the kitchen by the stove. The patient exhibited altered mentation, felt unwell, vomited twice and passed out. Time spent unconscious was unknown. Her words were slurred and she was alternating between somnolent and agitated. Otherwise her exam was unremarkable. Vital signs BP 147/55, pulse 86, respiration's 18, saO2 100%, EKG normal. Initial work up included arterial blood gas (ABG), high concentration oxygen, monitor, basic labs. ABG results were 7.44 / 33.7 / 145 / 22.7 / -0.8 with CO of 22.5. Consultation with the NJ Poison Control Center yielded a recommendation for hyperbaric oxygen treatment since the patient was at one point unconscious, with probable CO greater than 25. Our case is noteworthy in that the CO poisoning was apparently from a residential gas stove oven being used in a normal manner for cooking.

DISCUSSION: Residential CO exposure may be more prevalent than realized. In addition to improper use of stoves for home heating there is evidence that CO poisoning may result from normal use of stove ovens that are not properly maintained. There appears to be a lack of adequate public education and awareness about this issue. Populations who may misuse kitchen stoves for household heating could be especially affected. Once diagnosed treatment depends on level of exposure and clinical symptoms.

CV20

A severe case of factitious disorder successfully treated with Flexible Eclectic Psychotherapy (FEP)

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INTRODUCTION: Factitious disorder can be chronic debilitating illness associated with severe morbidity, mortality, and with excessive use of medical resources. We postulate that psychotherapy that is empathic and supportive; with an understanding of the patient's attachment style, cognitive distortions, defense mechanisms, and interpersonal relations can give us the best results. FEP is a form of psychotherapy that combines techniques from four different psychotherpies: Psychodynamic, CBT, IPT and Supportive Therapy. It also incorporates mindufulness, exercise and nutrition. A strong therapeutic alliance is crucial to the success of FEP. Techniques are tailored to the patient's needs and use according to the patient's current clinical state. The therapist assumes an active role in therapy.

CASE REPORT: 43 year old woman that had undergone multiple surgical procedures and hospitalizations. She developed a stroke and the necrosis in her left leg requiring amputation. These medical complications were self inflicted. Patient was treated with Flexible Eclectic Psychotherapy with weekly 45 minute sessios for 6 months. The patient engaged in

therapy and was compliant with treatment plan. One year after starting psychotherapy she did not exhibit self-injurious behavior, gain insight, improve the relationship with her husband and re-established contact with her mother.

DISCUSSION: The results of this case suggests that FEP could be an effective and affordable treatment for some cases of Factitious Disorder.

CV21

Flexible eclectic psychotherapy (FEP) : A viable option for the treatment of borderline personality disorder (BPD)

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INTRODUCTION: Borderline Personality Disorder (BPD) patients are commonly given several diagnosis, have multiple inpatinet admissions, recieve polypharmacy, and are treated with sequential psychotherapies by various practitioners. The result is an enormous overuse of resources with relatively poor outcomes. Flexible Eclectic Psychotharpy (FEP) is a form of psychotherapy that combines techniques from four different psychotherapies: Psychodynamic, CBT, IPT, and Supportive Therapy. It also incorporates mindfulness, exercise, and nutrition. A strong therapuetic alliance is crucial to the success of FEP. Techniques are tailored to the patient's current clincial state. Several techniques from different psychotherapies may be used in the same session. The therapist is empathic, flexible and active.

CASE REPORT: We present three cases of BPD that were sucessfully treated with FEP. Case 1: 68 sessions over 28 months 36 yr old woman with the chief complaint of feeling depressed, sucidal, and being overwhelmed. Her current stressors were a pending divorce and her other son in jail. She had a family history of depression and a history of sexual abuse. Diagnosis - BPD Case 2: 74 sessions over 60 months 35 yr old married woman, mother of three children. She presented with suicidal ideation and depression of post partum onset. She has a family history of depression and a history of sexual abuse. Diagnosis - BPD with dependent traits. Case 3: 22 sessions of 19 months 30 yr old married woman with two children. She presented with anxiety, difficulties at work, and was going through a marital crisis. She had a family history of depression and a history of physical and sexual abuse. Diagnosis - BPD with narcissistic traits.

DISCUSSION: Therapuetic Change - Two of the patients improved their relationships with their husbands. One got a divorce, but established a stable relationship with another man. Two of the patients were employed full-time and one part-time. The results of our study suggests that FEP could be a cost effective, viable option in the treatment of BPD. More studies are needed to determine the effectiveness of FEP in patinets with BPD.

CV22

The person behind the diagnosis

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INTRODUCTION: Anti-NMDA receptor encephalitis is a potentially fatal, devastating diagnosis that can present with complex neuropsychiatric symptoms. We often focus on diagnostic tests and pharmacological managment ignoring the psychological and social consequences on the patient and the family. We want to emphasize the importance of the therapeutic alliance in the treatment and recovery from this illness.

CASE REPORT: We report a case of anti-NMDA encephalitis that responded positively to an empathic consultation psychiatry team. The patient is a 13 year old girl that presented to the Emergency Room with delusions, hallucinations and agressive behavior. She was seen in the ETD for seizures one week prior.

DISCUSSION: The psychiatrist was able to develop a strong therapeutic alliance with the patient and her mother. She responded well to supportive psychotherapy techniques (empathic validation, praise, advice, reassurance) and agreed to take antipsychotic and anticonvulsant medications. Once the diagnosis anti-NMDA encephalitis was confirmed, the medical team's attitude toward the patient changed. The patient and her mother felt validated. What helped the patient remain compliant and reduce her agitation and aggressive behavior was the strong therapeutic alliance with the psychiatric team. This case demonstrates the importance of looking at the whole person based on a biopsychosocial understanding of the individual. Once the therapeutic alliance was established, the patient's aggresive behavior and compliance improved significantly. The patient's response to an empathic therapist was stronger than her response to antipsychotic and anticonvulsant medication.

CV23

Nearly drained: A rare case of retropharyngeal calcific tendonitis masquerading as an abscess

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INTRODUCTION: Calcific tendonitis is a common rheumatological disorder that manifests in the form of deposition of *Calcium hydroxyapatite* Crystals in the tendons. Typically, the rotator cuff is affected causing sharp pain that impairs the patient's range of motion. Retropharyngeal calcific tendonitis is an exceedingly rare manifestation of *Calcium hydroxyapatite* deposition that can mimic an infectious cyst in presentation as there is attenuation of fluid adjacent to the site of calcification. Distinguishing between the two requires close clinical correlation between the patient's presentation, vital signs, serum markers, imaging studies and progression despite appropriate antibiotics. Surgical drainage of a false abscess may expose the patient to an unnecessary and invasive procedure.

CASE REPORT: A healthy 60-year-old man presented to the Emergency Department with complaints of progressive severe right posterior neck pain that developed over 7 days. The pain was non-radiating and impaired his ability to move his neck. Further, he developed progressive odynophagia and a subjective fever in the 3 days prior to admission. He had no history of trauma to the head or neck or recent history of dental procedures. He reported no history of joint pain or stiffness. Physical examination demonstrated a temperature of 98.3F, mild posterior pharyngeal erythema and significant tenderness over the right lateral and posterior aspects of the neck. All laboratory tests were within normal limits with the exception of a mildly elevated ESR. A report on the CT scan of the head and neck performed in the ED noted a 4.5 x 0.7cm retropharyngeal fluid collection, suspicious for an abscess. The patient was promptly given a single dose of piperacillin-tazobactam, then started on a standing dose of ampicillin-sulbactam every 6 hours. The patient had no symptomatic relief with antibiotics and an ENT consult was made to evaluate for drainage of the presumed cyst. In the following days, the patient remained afebrile without leukocytosis nor bandemia. Upon an interdisciplinary case discussion with Internal Medicine, ENT and Radiology, a subsequent radiological report of the initial CT scan was generated. It clarified that the suspicious fluid accumulation was in fact calcification of the superior longus colli muscle with associated retropharyngeal fluid attenuation that was consistent with hydroxyapatite deposition rather than an abscess. The patient's antibiotics were discontinued and he was started on high dose naproxen to reduce inflammation along with pantoprazole for gastrointestinal protection. Within 24 hours of initiating NSAID therapy, he had profound improvement in his range of motion and required appreciably less PRN pain medications. The patient was discharged home with a 2 week course of naproxen.

DISCUSSION: Retropharyngeal calcific tendonitis has a similar presentation to a retropharyngeal abscess because of fluid attenuation at the site of calcification. Few case series have been reported but much of the literature suggests the disease being preliminarily managed as an abscess. This case should serve an exemplar for clinicians to broaden their differential in concert with their ENT and Radiology when approaching atypical deep neck pain.

CV24

A case of inferolateral st segment elevation in a patient with massive saddle pulmonary embolism

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INTRODUCTION: Saddle pulmonary embolism and myocardial infarction commonly present with cardiac arrest. However, massive pulmonary embolism is frequently associated with pulseless electrical activity and myocardial infarction is associated with ventricular fibrillation arrest. In case of acute myocardial infarction, getting the patient to the cardiac catheterization laboratory for reperfusion therapy is the goal of care. On the other hand, thrombolytic therapy is the mainstay of treatment in massive pulmonary embolism. In the case of contraindication to thrombolytic therapy, the alternative is embolectomy.

CASE REPORT: A 40 y/o Liberian male with history of type 2 Diabetes Mellitus presented to emergency room c/o blurry vision. He did not have any c/o lethargy or confusion. On further workup his blood sugars were noted to be 1680mg/dL. Vitals were stable during admission. Physical Exam was non-contributory. Chest x-ray was normal with no evidence of cardiomegaly, effusion or infiltrate. Electrocardiogram showed normal sinus rhythm with HR 76 and no ST-T segment changes. Patient was admitted to the intensive care unit (ICU) and was started on intravenous fluids, IV insulin and subcutaneous heparin for DVT prophylaxis. Patient did well for the next 24 hours and was ready to be discharged from the ICU. But the same morning, he suddenly became lightheaded and diaphoretic. Vitals were HR 90/min, BP 150/110 mmHg but a few minutes later his BP decreased to 70/30 mmHg. His HR started dropping to 30's and he went into respiratory distress. Patient was subsequently in-

tubated and given one dose of atropine which brought his HR back to 70's. Repeat electrocardiogram showed infero-lateral ST segment elevation. Cardiologist was called and while he was being transferred for cardiac catheterization, HR dropped to 30's and patient had no pulse. ACLS protocol was initiated for PEA cardiac arrest but even after 45 minutes of attempted resuscitation patient died. On autopsy, patient had bilateral massive saddle embolus of main pulmonary arteries which was thought to be the cause of his death.

DISCUSSION: In context of such an acute presentation, it is not clear that fibrinolytic therapy or embolectomy would have made a difference in the outcome. This case illustrates the importance of early recognition of pulmonary embolism with PEA cardiac arrest, even in patients who present with ST segment elevation on electrocardiogram.

CV25

When signs point to tardive dyskinesia should we search further?

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INTRODUCTION: Huntington's Disease (HD) was first recognized as an inherited disorder in 1872 by George Huntington. In his work he characterized HD as hereditary with a psychiatric component, and commonly seen in adults. Today HD has a worldwide incidence of 0.38 per 100,000 per year. The molecular etiology responsible for HD involves a trinucleotide CAG (cytosine-adenine-guanine) repeat expansion in the Huntingtin gene(HTT) on chromosome 4p16.3. Over successive generations expansion of the CAG repeats cause an earlier and more severe phenotype, termed anticipation. Studies have shown paternal transmission more common and thought to produce the largest increase.

CASE REPORT: A 59-year-old Pakistani male with no PMH presented to ED by EMS after being found wondering the streets in Elizabeth, NJ. Patient appeared confused, disorganized, and presented with what was thought as altered mental status (AMS)- speech fragmented, stating only that he "lived far away". Patient was admitted after ED evaluation for AMS. Further search into the patient's social history revealed time served at Riker's Island Maximum Security Prison, as well as Kirby Psychiatric Facility. As per Kirby's records in 2011 patient displayed "intermittent disorganized thinking, with slow and halting patterns, alert and oriented, but with blunted affect". While at Kirby Psychiatric facility patient was treated with Haldol (1mg titrated up to 10mg D), in which he later developed suicidal thoughts. He was then started on Escitalopram, inclusive of a trial of Aripiprazole 15mg D. The patient's past medication history was of importance, as the patient displayed what was initially thought to be Tardive Dyskinesia as patient exhibited involuntary movements. Family history was not significant for any form of neurocognitive disorders. Physical exam of significance included repetitive mouth movements and B/L spontaneous movement of limbs, choreiform in nature. Simple sentences were somewhat dysarthric, with the remaining Neurological exam intact. Laboratory findings including MRI and CT imaging remained unremarkable during his course of hospital stay. Furthermore, CBC, CMP, CRP, ESR, B12, Ammonia, TSH were all within normal limits. In addition, Tylenol, Salicylate levels, UDS, Blood/Urine cultures, ETOH level, rapid HIV all negative. UA was negative except for trace ketones. CPK was initially increased at 429, but trended down to 191 next day. Last, RPR was non-reactive. Of question, did this patient exhibit in fact tardive dyskinesia status post Psychiatric care or could these findings be Neurodegenerative in nature? Psychiatry and Neurology were consulted. Patient was empirically started on Haldol 0.5mg TID - with presumptive diagnosis of Huntington's. The patient's chorea over the course of hospital stay dramatically improved with Haldol, furthermore increasing the suspicion of Huntington Disease. Confirmation of HD was performed with analysis for CAG repeats via PCR. It was then concluded that the patient did indeed carry the allele with 46 repeats.

DISCUSSION: HD without family history of genetic susceptibly may often be over shadowed by psychotropic medication trials and misdiagnosed as Tardive Dykinesia. This case highlights the importance of exploring a rare possible causes of involving movements even despite significant family history. Although not curative, Haldol was found to lead to the markedly suppression of chorea in this patient.

CV26

Acute kidney injury following conversion from laparoscopic to open cholecystectomy

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INTRODUCTION: Laparoscopic cholecystectomy has rapidly become the favored technique for the treatment of gallbladder disease in the United States. Apparent advantages such as decreased hospital length of stay, reduced cost, and increased patient satisfaction are the main reasons for the wide popularity of this technique.Pneumoperitoneum induced by the surgeon during the laparoscopic surgery raises the

intraabdominal pressure and can lead to ischemic reperfusion kidney injury due to alterations in renal blood flowresulting in decreased creatinine clearance and urinary output.

CASE REPORT: A 58-year-old Caucasian man with past medical history of hypertension, chronic obstructive pulmonary disease, gastroesophageal reflux disease came in to the emergency room with right upper abdominal pain. The patient had a large fatty meal prior to pain onset. His pain was localized to right upper quadrant, 10/10 in intensity and had no relieving factors. Patient had 5-6 episodes of vomiting and reported having subjective fever associated with chills. Patient's vitals were stable and cardiopulmonary examination was normal. His abdominal examination revealed tenderness in RUQ and a positive Murphy's sign. His preoperative work-up showed an elevated creatinine of 1.39 mg/dL, and leukocytosis of 17.7cells/ul. Radiological studies demonstrated cholelithiasis. His mild acute kidney injury on admission resolved with IV hydration and his creatinine prior to surgery came down to 0.86 mg/dL. The patient underwent laparoscopic cholecystectomy which was then converted into open cholecystectomy due to procedural difficulties secondary to multiple adhesions. The patient received adequate hydration intraoperatively and maintained an adequate urine output throughout the procedure.There wereno complications during the surgery and patient tolerated the procedure well. On the first postoperative day, patient was found to have an acute kidney injury with BUN of 21 mg/dL and creatinine of 2.7 mg/dL. The IV fluids were continued and the Nephrology team was consulted. The patient remained asymptomatic during the postoperative period and his diet was advanced as tolerated. He was fluid resuscitated and over the next few days, his renal failure resolved.

DISCUSSION: This case illustrates that even when there are no obvious risk factors, high index of suspicion should be maintained for early recognition and treatment of complications after cholecystectomy. It is important to anticipate AKI in patients undergoing laparoscopic surgeries with longer intraoperative time and treat appropriately in postoperative period.

CV27

Progressive multifocal leukoencephalopathy (PML) in HIV youth may point to a worrisome trend

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INTRODUCTION: Through discussion of progressive multifocal leukoencephalopathy (PML) in younger HIV patients, our main focus is to bring awareness to a likely increasing trend in the number and dexterity of the cases/incidence/prevalence of PML and what its tentative impact on prospective medical care.

CASE REPORT: A 22 year old female with medical history of HIV contracted at birth, asthma, bipolar disorder, and medical non-compliance presented to our facility with major complaints of headache over the last 3 months. One month after initiation of headaches, paresis of her left lower extremity was noted and worsened over time. In addition, her headaches progressed and caused dysarthria when pain was severe. During this time, MRI from outside hospital revealed a right-sided brain mass as per patient, and at that time the patient was given Sulfamethoxale-Trimethoprim for possible Toxoplasmosis. As her symptoms yet worsened, she presented at our facility without documentation from the previous hospital. Patient indeed was noted to have left facial drooping, and left upper and lower extremity paresis with decreased sensation. CD4% at 2% and HIV 1 RNA quantitative PCR at 118 copies/mL were noted from labs and Toxoplasma IgM and IgG were negative. Our MRI results showed non-enhancing, asymmetrical white matter signal intensity, right side greater than left that suggested possible progressive multifocal leukoencephalopathy (PML) vs HIV encephalopathy. After retrieving outside hospital records, it was revealed that 1 month prior, the patient's CD4% was at 5.3% and HIV 1 RNA quantitative PCR at 122,944 copies/mL and results from her lumbar puncture returned to be positive for JC virus. Patient was diagnosed with HIV AIDS with PML, and after diagnosis was made patient was continued on HAART therapy as the only possible management. Formerly, PML in the youth was even more of a rarity as so many children died perinatally. But, as there seems to be fewer deaths in HIV-infected patients over the years after initiation of HAART therapy, then it is feasible that we also may see an increase in the incidence of PML among younger age groups.

DISCUSSION: With our and other reviewed cases, our desire is to hopefully expand the scope on HIV infected illnesses, such as PML, and note for any potential trends and/or how they may challenge medicine.

CV28

A case of pylephlebitis in a diabetic without classic risk factors

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INTRODUCTION: Pylephlebitis is comprised of thrombosis of the portomesenteric venous system and

bacteremia. The latter is commonly polymicrobial, but organisms such as facultative gram-negative bacilli, streptococci, and Bacteroides spp. are common culprits. Historically, infectious or inflammatory processes from the structures drained by these veins were responsible for the contiguous or hematogenous spread of the infection. Nowadays, a handful of cases remain without a clear etiology for pylephlebitis as noted in this case.

CASE REPORT: A 67 year-old obese, heavy smoker, Hispanic female with history of remote breast cancer, hypertension, dyslipidemia, chronic obstructive pulmonary disease, and recurrent Escherichia coli urinary tract infections (UTI) presented with fever, chills, polyuria, and polydipsia for three days. She denied any abdominal pain, dysuria, hematuria, or previous nephrolithiasis. Aside from hypotension, the rest of the examination was unrevealing. Initial work-up showed leukocytosis with bandemia, marked hyperglycemia, lactic acidosis, with normal transaminases and lipase. Urinalysis showed pyuria, bacteriuria, with positive nitrites and leukocyte esterase. A glycated hemoglobin was 13%. Urine culture grew E. coli, and a renal sonogram revealed bilateral staghorn calculi. Interestingly, blood cultures grew Bacteriodes fragilis and Group B streptococcus. A computerized tomography of the abdomen and pelvis with contrast revealed unopacified left portal vein, attenuated right portal vein with portacaval lymphadenopathy, and bilateral renal calculi. An MRI of the abdomen and pelvis confirmed thrombosis of the left portal vein and anterior segment of the right portal vein with a normal liver appearance and no focal pancreatic lesions. Upon further questioning, she had no previous abdominal trauma or surgery, personal or family history of thromboembolism, prior oral contraceptive exposure, or hormonal therapy. Thrombophilia work-up, including protein C, S, and antithrombin-III came back as normal, with negative antinuclear antibody, factor V Leiden mutation, and lupus anticoagulant. Subsequently, she was placed on long-term anticoagulation with apixaban, with completion of amoxicillin-clavulanate as an outpatient.

DISCUSSION: After excluding potential intra-abdominal infectious sources, it is not clear if the remote history of malignancy could have contributed to this epiphenomenon. Recent investigations have linked gut leakiness and resultant gut endotoxemia with inflammation, which appeals as an alternative when the etiology is unknown. Diabetes may aggravate the process predisposing to infection and pylephlebitis. The translocation of Bacteroides ultimately triggers the thrombotic cascade.

CV29

Environmental risk factors for signet-ring cell colorectal carcinoma in low risk populations

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INTRODUCTION: Colorectal cancer (CRC) is the second leading cause of death in western countries. Historically, 20-25% of individuals with CRC have significant risk factors such as age, lifestyle, associated medical conditions or polygenic inheritance, placing them as high-risk. Screening guidelines exist for high-risk populations however there is limited data for young, low risk patients; especially those belonging to non-white or minority populations. Overall, only 2-3% of CRCs occur in young adults and are mainly associated with aggressive, sporadic malignancies such as mucinous and signet ring cell colon cancer (SRCC). The latter, representing an independent, poor prognostic factor and a 42-57% higher risk of death.

CASE REPORT: We present the case of a 24-year-old Hispanic male from El Salvador with no previous medical history who noticed 6 months of persistent, progressive constipation with accompanying change in caliber to a "pencil sized" diameter. Our patient was self medicating with lactulose however following an inability to void for five days, he presented to the Emergency Department. He has a family history significant for a brain tumor in his brother and lymphoma in his maternal aunt. The patient was an agricultural worker until immigrating to the United States. His physical exam was significant for diffuse abdominal tenderness and distension. Abdominal CT scan revealed a partial obstruction in the mid sigmoid colon and a subsequent colonoscopy showed an obstructing mass 15cm from the anal verge. Surgical biopsy of the mass revealed it to be an invasive, poorly differentiated SRCC. A palliative colostomy was created due to the presence of carcinomatosis and the unresectable nature of the malignancy. The patient experienced extensive surgical complications including multiple abdominal abscesses. He unfortunately has a poor prognosis and only palliative measures will be pursued for his care.

DISCUSSION: Given our patient's relevant family history of unspecified brain tumor, blood dyscrasia and the absence of evidence for CRC, hereditary CRC syndromes are highly unlikely. It is our hypothesis that either a germ line mutation or exposure to agricultural carcinogens will ultimately be implicated in our patient's SRCC. Agricultural exposure has been linked to various cancers however the impact of environmental factors in the pathogenesis of SRCC is still unexplored.

CV30

Gender dysphoria and depression in a 30 year old female

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INTRODUCTION: According to the DSM-V, gender dysphoria is a general descriptive term that refers to an individual's affective/cognitive discontent with the assigned gender but is more specifically defined when used as a diagnostic category.It refers to the distress that may accompany the incongruence between one's experienced or expressed gender and one's assigned gender. The DSM-V states "clinically referred adults with gender dysphoria may have coexisting mental health problems, most commonly anxiety and depressive disorders (1)." This case study with accompanying literature review is intended to show the correlation between people diagnosed with gender dysphoria and co-morbid psychiatric illness.

CASE REPORT: The patient is a 30 y/o female who wants to be considered male, single, employed, living alone, recently discharged from the inpatient unit on 11/15 for suicidal ideations, presents for continuation of services. Patient from here on will be referred to by the male pronoun. Patient reports to be feeling depressed for the last 3-4 months, which he states stems from a break up he had with a girlfriend in October and from limited social support. He reports feeling lonely, depressed, irritable/angry at times, problems sleeping, ruminating thoughts about the ex-girlfriend, decreased appetite, decreased weight, decreased energy, decreased focus, denies manic symptoms and no report of psychotic symptoms. He expresses feelings of social rejection due to gender choices, he's "felt like a boy since the age of 6". Most of his family disproves of him. He wants to take hormones and remove breasts, but feels sexual reassignment surgery is "too risky." Some of the diagnostic features of gender dysphoria in adults, according to DSM-V are the discrepancy between experienced gender and physical characteristics. They may feel uncomfortable being regarded by their natal gender or behaving in the stereotypical way. He reports a long history of physical and emotional abuse by immediate family members, due to family reportedly not being supportive of [her] choice to be raised as a male. Patient states his mother "never loved him and told him that she only has one son and he's not it." He admits to having three inpatient psychiatric hospitalizations starting as a child, after expressing suicidal ideations. In 1997, there was a trial conducted by Cole et al, with gender dysphoric individuals. The study related these depressive feelings to "suppression of transgender feelings and behaviors resulting in social isolation, loneliness and hopelessness."

DISCUSSION: The patient's outlook is guarded; he has limited social support and history of suicidal ideations when under stress. However, his assets are motivation for treatment, continued ability to perform at work adequately and currently denying suicidal ideations, intents and plans, as well as not having a reported history of suicide attempt.A plan of treatment was made for the patient, starting him on a SNDRI and was assigned an individual therapist for weekly sessions.

CV31

Chronic lymphocytic leukemia with high tumor burden presenting as spontaneous tumor iysis syndrome

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INTRODUCTION: Tumor lysis syndrome (TLS) occurs when tumor cells release their contents into the bloodstream, either spontaneously or in response to chemotherapy, leading to the characteristic findings of hyperuricemia, hyperkalemia, hyperphosphatemia, and hypocalcemia. These electrolytes and metabolic disturbances can progress to toxic effects, including acute kidney injury (AKI), cardiac arrhythmias, seizures, and death due to multi-organ failure. TLS is usually common after initiation of cytotoxic therapy resulting from the destruction of tumor cells, but also been noticed to occur spontaneously in patient with a high tumor burden but is extremely rare in Chronic Lymphocytic Leukemia (CLL), and only a handful of reports have established this finding.

CASE REPORT: We report the occurrence of spontaneous tumor lysis in a 52 year old male patient who presented to our hospital complaining of progressively enlarging, non-painful growths in the neck and axilla along with bilateral lower limb and scrotal swelling. On physical examination the patient had diffuse, generalized, mobile, non-tender lymphadenopathy in the cervical, axillary, and inguinal region. Abdominal examination revealed hepatosplenomegaly. CT scan of the chest showed diffuse lymphadenopathy in the cervical, axillary, and mediastinal region. Patient was found to have WBC of 412K, Hemoglobin of 6.9gm/dL and platelets of 69K on initial laboratory evaluation. A basic metabolic profile revealed the following: potassium 5.4 mEq/L, calcium 9mg/dL, phosphorus 4.3 mg/dL, BUN 31 mg/dL, creatinine 1.77 mg/dL and uric acid 11.8 mg/dL. The patient was started on Allopurinol, and IV hydration for treatment of tumor lysis. Hospital day 2, uric acid levels remained elevated at 13.1mg/dL. Rasburicase was initiated with excellent results. He

eventually underwent bone marrow biopsy and was diagnosed with Chronic Lymphocytic Leukemia Rai stage 4. Patient was subsequently started on chemotherapy with Cyclophosphamide, Rituximab and Fludarabine with close surveillance for recurrence of TLS.

DISCUSSION: CLL with very high tumor burden can undergo TLS with chemotherapy. However, spontaneous occurrence is rare. Although Cairo-Bishop criteria is used to diagnose TLS, this criteria does not specifically differentiate between treatment related vs spontaneous TLS. Our patient had elevated uric acid, potassium, and AKI prior to chemotherapy, it was felt that the patient was presenting with spontaneous TLS. Early recognition of TLS is essential to prevent potentially life threatening complications.

CV32

Heterotopic pregnancy mimicking acute appendicitis

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INTRODUCTION: One of the most common complaints in the Emergency Department is abdominal pain. Emergency Medicine physicians are skilled at assessing, diagnosing and risk stratifying patients based on history, physician exam and initial laboratory and imaging work up. ER physicians know by heart the most common risk factors and presentations for a number of abdominal complaints and are able to adapt to changes in the patient and unexpected laboratory findings. Below is a case in which a very common presentation of right lower quadrant abdomen pain without any risk factors presented with a very rare pathology.

CASE REPORT: A 27 year-old female presented to the Emergency Department complaining of abdominal pain beginning approximately 4 hours prior to arrival. Initially the pain was in the midepigastric region and then migrated to the right lower quadrat (RLQ). She described it as sharp, nonradiating, worse with movement and rated it as a 9/10. At the time she stated she was menstruating, but her cycle was longer than normal. Patient denied fevers, chills but reported mild nausea. Her vital signs were stable and she was a febrile. Her physical examination was remarkable for right lower quadrant (RLQ) abdominal tenderness with rebound and guarding, approximately at McBurney's point. Urine pregnancy test, however, was positive, so additionally BHCG was ordered out of concern for ectopic pregnancy. The patient had no history of ectopic pregnancy, sexual transmitted diseases, pelvic inflammatory denies, intraunterine device, in vitro fertilization, or other assisted reproductivetechnology. Ultrasound of the RLQ revealed no evidence of appendicitis, but did note complex pelvic fluid suggestive of blood. Transvaginal ultrasound was performed which showed an intrauterine pregnancy dated at 6 weeks 4 days and a complex cystic mass in the right adnexa consistent with heterotopic pregnancy. There was a moderate amount of fluid in the pelvis, extending into Morrison's pouch. OBGYN was consulted, and the patient underwent immediate laparoscopic right salpingectomy and suction dilation and curettage. 100cc of hemoperitoneum was noted. The patient was stable following the procedure and was discharged without complication.

DISCUSSION: Normally in a pregnant female with an IUP, abdominal pain and vaginal bleeding, we diagnose the patient as a threatened abortion and have the patient follow up with OBGYN. The difference in this patient was the amount of free fluid which would be concerning for other pathology, prompting OBGYN consultation and emergent trip to the OR.

CV33

A near miss - mystery of hematuria

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INTRODUCTION: Homeless patients have less access to health care and often present with advanced undiagnosed disease. We present a case of a homeless man who suffered from hematuria for an year. Extensive workups failed to reveal the etiology of his hematuria. The need for anticoagulation for atrial fibrillation as stroke prophylaxis as well as his homeless state contributed positively to a life threatening diagnosis. This patient's homelessness allowed us to continually evaluate him for a curable malignancy.

CASE REPORT: A 67 year old man with PMH of Diabetes, Hypertension, Atrial Fibrillation, and CVA presented with atypical chest pain and hematuria of six months duration. Workup done at a neighboring institution (Renal CT scan and cystoscopy) revealed bilateral kidney stones. Urology believed the hematuria was secondary to a large stone in right kidney and a urinary tract infection. CT confirmed large right stone with hydronephrosis. Cardiac catheterization revealed severe multi-vessel coronary artery disease and critical Aortic Stenosis. Patient underwent CABG and aortic valve replacement 6 weeks after admission. Patient's hematuria resolved at the time of the surgery but reoccurred after anticoagulation; he refused further anticoagulation. Patient was homeless and remained in the hospital for post-op care. Urology subsequently re-cystoscoped the patient and removed right kidney stone. Hematuria persisted. Extensive

lithotripsy was then employed to remove remaining stones, yet the hematuria persisted. Repeat CT scan demonstrated fullness in right kidney pelvis. MRI done showed renal mass vs chronic right pelvis clot. Urology stated that it is highly unlikely for the mass to be malignant as patient had multiple ureteroscopies which demonstrated only blood clot in this area. Patient received another ureteroscopy with a negative biopsy. Anticoagulation was restarted and hematuria reoccurred. Right Nephrectomy was recommended as malignancy could not definitively be ruled out. Nephrectomy was done 4.5 months after admission and revealed 7cm renal cell cancer extending into the pelvis. The surgery was curative and the patient was successfully anti-coagulated.

DISCUSSION: This was a near miss event in that the patient had extensive appropriate workup for hematuria that failed to reveal the true etiology. Lessons can be gained from this complicated case. A negative biopsy does not always rule out malignancy. Persistence and second looks are important in diagnosing complaints.

CV34

Candida albicans lumbar spondylodiscitis in an immunocompetent patient

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INTRODUCTION: Fungal spondylodiscitis is rare especially among immunocompetent patients. We present a case of lumbar 1-2 spondylodiscitis confirmed by disc biopsy.

CASE REPORT: A 75 year-old African-American man presented to the emergency room with a complaint of persistent, intractable lower back pain for 5 months. He denied fever, chills, night sweats, dysuria, hematuria, falls or trauma. He lost appetite and lost 6 kg in the last 2 months. His past medical history includes controlled type 2 diabetes, essential hypertension, coronary artery disease, dementia likely from vascular dementia and a distant history of alcoholism, and left hip replacement. He was hospitalized for questionable diverticulitis diagnosed by computed tomography (CT) of abdomen and pelvis 2 months prior. A blood culture at that time grew *Candida albicans*. Transesophageal cardiac echo did not show any evidence of endocarditis and he completed a course of micafungin for 10 days. It was hypothesized that microperforation resulting from diverticulitis lead to positive blood culture for *Candida albicans*. A set of repeat blood culture did not show growth of any organisms. He continuously complained of persistent back pain after discharge. One month prior to the presentation, he was again seen at the emergency room for persistent back pain. CT of abdomen and pelvis showed questionable left pyelonephritis without evidence of infection in urinalysis. However, CT showed a new compression fracture of L2. There was no fever or leukocytosis. He received a vest for stabilization of his compression fracture. On admission, laboratory tests showed leukocytosis of 13.7 x 103/ml with 78.4% neutrophils with an elevated erythrocyte sediment rate of 131 mm/hr. Liver and renal function tests and hemoglobin A1c of 4.7% were within normal limits. Purified protein derivative (PPD) skin test and human immunodeficiency virus (HIV) tests were negative. Magnetic resonance image (MRI) of the lumbar spine with contrast showed discitis and osteomyelitis of L1 - L2 without abscess. Blood cultures did not grow any bacteria or fungus. A biopsy of L1 - L2 disc region showed *Candida albicans*.. Patient was treated with intravenous fluconazole.

DISCUSSION: Fugal spondylodiscitis is rare among immunocompetent patients. Nonspecific complaints and slow progression make it challenging to diagnose this condition. Hematologic spread of the most common etiology of transmission with lumbar spine as a most predominant location. Our case showed a slow progression over for at least 2 months. This suggests the need for clinicians to be cautious for discitis especially among patients with history of infection even among individuals who are immunocompetent.

CV35

A case of critical illness polyneuropathy after prolonged mechanical ventilation

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INTRODUCTION: Neuromuscular abnormalities develop frequently among intensive care unit patients with primary diseases like sepsis, multiple trauma and/or multiple organ failure on the basis of their critical illness. These clinical pictures are thought as the components of systemic inflammatory response syndrome (SIRS) and may appear as polyneuropathy, myopathy, neuromuscular transmission defects or their combinations. Critical illness polyneuropathy (CIP) which affects motor and sensory nerve axons was first defined by Bolton et al. in 1984 as a common complication of critical illness.

CASE REPORT: A 51 y/o Caucasian male inmate with past medical history of coronary artery disease was admitted to outside facility after he sustained a cardiac arrest. He was intubated and placed on mechanical ventilation. Patient eventually received a tracheostomy for prolonged weaning and anoxic encephalopathy and later on was weaned off the ven-

tilator. But he became hypoxic off the ventilator and was found to have pneumonia possibly secondary to aspiration. Patient was then transferred to our facility for further management of aspiration pneumonia. He was treated for 10 days with antibiotics. During the weaning, it was seen that the patient was failing his wean daily but patient was clinically improving and his pneumonia was getting better on chest radiography. Additionally, patient was not able to move both his upper and lower extremities even after regaining his consciousness completely. MRI brain and cervical spine was performed which showed no evidence of stroke or cervical fractures, mass or cord compression. Neurology was consulted and they recommended an electromyography which revealed evidence of neurogenic process that affected muscle groups innervated by multiple spinal myotomes. This was consistent with critical illness polyneuropathy. Patient was managed conservatively with good enteral nutrition, replenishment of electrolytes and he improved. He was weaned off the ventilator to oxygen via tracheostomy collar and was transferred to long term acute care rehabilitation.

DISCUSSION: In patients with prolonged mechanical ventilation, the occurrence of limb weakness indicates the necessity of neurophysiologic examination, muscle biopsies and laboratory tests, which may help detect critical illness polyneuropathy in the early phase. Proper interventions to treat the precipitating condition may reduce the likelihood of CIP.

CV36

Recurrent pericardial effusion secondary to hydralazine-induced lupus syndrome with negative ANA

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INTRODUCTION: Hydralazine-induced lupus syndrome (HILS) occurs in 5-10% of patients taking hydralazine and presents with arthralgia, myalgia, fever and serositis. HILS occurs in 10.4% of patients taking 200 mg of hydralazine; after 3 years of treatment. Antinuclear antibodies (ANAs) are positive in almost all patients with HILS. However, ANA-negative HILS has been rarely reported. We report a case of recurrent pericardial tamponade in patient who was on hydralazine with negative ANA and positive anti-histone antibodies.

CASE REPORT: A 36 year old Caucasian female with past medical h/o diastolic dysfunction, hypertension, cardiac arrest with anoxic encephalopathy, chronic kidney disease, diabetes, hypothyroidism, polysubstance abuse, cerebrovascular accident was recently admitted to our facility for pericardial effusion and early tamponade. During that admission, patient underwent an emergent pericardial window placement and was monitored for 4-5 days in the hospital. One week after discharge, patient presented to emergency room with c/o worsening shortness of breath. On admission, patient was normotensive and afebrile. On further evaluation with a bedside 2-Dimensional (2D) echocardiogram, patient was found to have recurrent massive pericardial effusion with early signs of tamponade. Patient was immediately taken to operating room for pericardial resection and drainage of pericardial effusion. After surgery, patient was transferred to intensive care for further monitoring. Complete blood count revealed an elevated WBC count without left shift. Basal metabolic panel revealed elevated blood urea nitrogen and creatinine. Further workup revealed normal thyroid stimulating hormone (TSH) with elevated erythrocyte sedimentation rate (ESR) and C-reactive protein levels. Pathology results revealed severe fibrinous and hemorrhagic pericarditis. No evidence of malignancy or infection was seen. Patient had negative ANA but positive anti-histone antibody (AHA) levels consistent with drug induced lupus. Patient was on 300 mg/day of hydralazine for the last 2-3 years to control her hypertension. Due to positive AHA, hydralazine was stopped and labatelol was added. Patient did not have any repeat pericardial effusion after stopping hydralazine.

DISCUSSION: Pericardial effusion occurs infrequently in HILS (<5%). This case illustrates the need for high degree of suspicion even in ANA negative patients, as early treatment is mandatory. Discontinuation of the implicated drug is a critical part in the management. Corticosteroids and immunosuppressive therapies are only required in life-threatening cases of HILS.

CV37

A rare case of "hidden" left atrial to esophageal fistula presenting as *Clostridium perfringes* septicemia

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INTRODUCTION: Left atrial to esophageal fistula (LAEF) is a rare complication of radiofrequency ablation for atrial fibrillation. It is associated with high mortality if not recognized early and managed with definitive surgical repair. *Clostridium perfringes* is not commonly detected in blood culture specimens. Clostridium bacteremia in patients usually has a gastrointestinal source and it often occurs in patients with serious underlying medical conditions. Early diagnosis combined with immediate operative repair can evade the potential sequelae of LAEF.

CASE REPORT: A 57 year old male was brought into emergency department by family for change in mental status. According to his wife, patient suddenly became unresponsive while having dinner. No seizure like activity, urinary or bowel incontinence was noted. Patient described having palpitations before the event. He underwent ablation for atrial fibrillation three weeks prior to presentation. Few hours later, patient became unresponsive. On examination, he had right sided weakness. Magnetic resonance imaging (MRI) brain revealed multiple infarcts which raised possibility of embolic phenomenon. Subsequently, patient started spiking temperatures. Patient was empirically started on broad spectrum antibiotics. Blood cultures grew *Clostridium perfringes*. Transesophageal echocardiogram was negative for any vegetation. Next day, patient had PEA cardiac arrest from which he was successfully revived. He had an episode of massive hematemesis prior to the arrest. Patient was intubated during the arrest and placed on mechanical ventilator. CT head showed interval progression of bilateral infarcts. Infarcts likely occurred as a result of septic embolus to the brain. Upper endoscopy was normal without any evidence of active bleeding. Patient was transferred to another facility on family's request. He underwent a repeat upper endoscopy which initially failed to reveal any pathology but on withdrawal of the scope, a flap opened up in the lower third of esophagus and a 1cm fistulous opening was seen with fresh blood oozing out of it. Patient had another cardiac arrest during the endoscopy and he died despite all measures.

DISCUSSION: Early recognition of Left Atrial to Esophageal Fistula is imperative in patients with septicemia and massive upper gastrointestinal hemorrhage, who recently underwent ablation for atrial fibrillation. Diagnosis of LAEF in this patient was difficult as the fistula was covered by a flap of mucosa which also prevented it from causing life threatening hemorrhage.

CV38

Herpes B

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INTRODUCTION: Infectious diseases are often encountered by physicians. Zoonotic exposures can cause infectious diseases that are unfamiliar and deadly. Physician's knowledge of the association between the deadly herpes B infection and wild macaque monkey can expedite treatment and be instrumental in patient morbidity and survival.

CASE REPORT: A 26-year-old female presented to a U.S. ED (emergency department) for a second dose of rabies vaccine, 1 week after being bitten by a macaque monkey on her trip to Bali. She had been treated at a Balinese hospital with one intramuscular injection dose of Verorab, an inactivated rabies vaccine. Her examination demonstrated a healing bite wound on the shoulder without signs of rash or infection. After consultation with public health officials, the ED team deemed the patient to be at risk for developing the herpes B viral infection from the monkey bite. The patient was prescribed acyclovir 800 mg orally five times daily for 14 days for prophylactic coverage. As symptoms can occur up to 5 weeks post exposure, the ED team decided the benefits of antiviral prophylaxis outweighed the potential risks.

DISCUSSION: The herpes B virus is a zoonotic agent that is endemic among only asymptomatic macaque monkeys but can cause fatal encephalomyelitis in humans. In humans, untreated herpes B virus is fatal at 80%. Symptoms include vesicular herpetic lesions, nonspecific flu-like illness, pain, numbness, itching, respiratory depression, and encephalitis. Prophylaxis is with either valacyclovir or acyclovir orally, while symptomatic treatment consists of in inpatient acyclovir or ganciclovir intravenously.

CV39

A case of renal failure: Idiopathic FSGS

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INTRODUCTION: Focal segmental glomerulosclerosis (FSGS) is a known cause of nephrotic syndrome. It can be primary (Idiopathic) or secondary and can have a variable clinical course ranging from asymptomatic proteinuria to renal failure requiring hemodialysis. The disease is more commonly found in males than females and also more in Blacks than Caucasians and Asians. Idiopathic FSGS is generally treated with steroids, or in some cases, immunosuppressive agents, in those patients who are refractory to steroids.

CASE REPORT: A 33 year-old Hispanic male originally from El Salvador who had not seen a physician for many years presented with a 2-week history of generalized body aches and fatigue. He admitted to taking amoxicillin and Advil without relief. In addition, he also admitted to having multiple episodes of non-bilious/non-bloody vomiting. He reported symptoms of vague upper respiratory infection including pleurisy, shortness of breath, dry cough, subjective fever, and mild intermittent epistaxis several weeks before admission. There is no history of injection drug use or promiscuous sexual behavior. He had normal urine output with no change in color, dysuria, or frequency.

Upon further history taking, patient also admitted to having foamy urine for the past 5 years. On examination, he is normotensive, without fever. Dry mucous membranes are evident, without abnormal adventitious lung sounds, murmur, or edema. Diagnostic tests include leukocytosis with polymorphonuclear predominant differential count, normocytic anemia, azotemia, hyponatremia, hypokalemia, and anion gap metabolic acidosis. Urinalysis shows proteinuria, without pyuria, hematuria, or casts. The proteinuria is further evaluated by a 24 hour urine protein testing which is consistent with nephrotic syndrome. A renal ultrasound disclosed bilateral atrophic kidneys. Further work-up showed negative serologies for HIV, Hepatitis B and C, and vasculitis. After the patient's appropriate sodium correction with 3% NS and hydration, vascular access was obtained and hemodialysis was initiated. A percutaneous renal biopsy showed focal, severe segmental and diffuse global glomerulopathy, tubular atrophy, and severe interstitial fibrosis. In summary, this young Hispanic male with unrecognized long standing chronic kidney disease, likely exacerbated by recent ibuprofen use as well as possibly by amoxicillin use, presented with severe nephrotic syndrome and was found to have Idiopathic FSGS, a rare cause of ESRD in young patients.

DISCUSSION: This case posed many challenges namely the significant hyponatremia that needed to be corrected adequately prior to hemodialysis. It also required the need for an extensive work up to establish the diagnosis and subsequently treat his idiopathic FSGS. This case shows the need for continuing research into FSGS considering the annual incidence rate is 5 cases per million populations in whites and 24 cases per million populations in African-Americans.

CV40

CSF ADA : A useful tool in the diagnosis of Tuberculous Meningitis (TBM)

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INTRODUCTION: TBM remains a global health problem with resurgence in the developed world as an opportunistic infection. Definitive diagnosis remains difficult due to pleomorphic clinical presentations and variable sensitivities of diagnostic studies.The gold standard remains by either AFB stain on smear and/or culture. However, direct smear methods are often negative and culture can take up to 4-6 weeks, resulting in delayed treatment.

CASE REPORT: 71 year-old African-American female, retired EMS paramedic, with hypertension, history of ischemic stroke, Hepatitis C, colon cancer s/p resection several years ago was hospitalized for fever, chills and altered mental status. Treatment was started empirically for bacterial meningitis. HIV antibody testing was negative. Subsequently, CSF analysis showed WBC 155 with 90% lymphocytosis, glucose 23, protein 299, but negative for gram stain, AFB smear, bacterial and fungal cultures, and herpes PCR. A further history per family revealed that patient had tested positive for PPD skin test few months ago, and it was unclear if she was treated. We tested serum for quantiferon gold test, which returned positive. CSF Adenosine Deaminase Activity (ADA) was measured at 14.2 U/L/min. Patient was then treated with anti tubercular regimen with clinical improvement.

DISCUSSION: Our patient was treated for TB meningitis based on the following results: (+) PPD, (+) serum quantiferon, and ADA 14.2 U/L/min. In our search of literature, we found that determination of ADA activity in CSF of TBM patients using cut off value of 11.39 U/L/min can be useful for early differential diagnosis of TBM sensitivities of 78-96%. Also, at this cut off value the sensitivity of ADA test to differentiate between TBM and non-infectious meningitis was 82%, even in low endemicity areas.

CV41

May-Thurner Syndrome (MTS) : A rare cause of DVT in the young

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INTRODUCTION: The May-Thurner syndrome is a deep venous thrombosis (DVT) of the left iliofemoral vein due to compression by right primitive iliac artery against the fifth lumbar vertebrae, typically seen in women between the ages of 20-40 years. Chronic compression results in intimal proliferation to form webs and spurs leading to partial occlusion of veins. These 'lesions' elevate ambulatory venous pressures which increases the risk of initial and recurrent DVT episodes and also the risk of treatment failure with medical and endovascular therapies. This anatomical lesion is widespread with incidence ranging from 22 to 32% according to autopsy studies, but MTS accounts for only 2-3% of all lower extremity DVTs.

CASE REPORT: 16 year old Hispanic woman presented with one week of swelling & warmth over left lower extremity and was found to have extensive DVT involving proximal femoral and iliac systems. She was treated with warfarin over the next 6 months, with only partial improvement in symptoms and doppler assessed recanalization of the iliac and femoral sys-

tems. Given the poor response to anticoagulation and young age at presentation, May Thurner syndrome was suspected, and later confirmed on Magnetic Resonance Venography 9 months after initial presentation. Subsequently, angioplasty and intravascular ultrasound was performed which confirmed narrowing with weblike formation within the iliac system. Two stents were placed from the left common iliac to left common femoral venous systems at the same sitting. Unfortunately, symptoms persisted and she was found to have stent thrombosis on doppler less than one month later. This was treated with intravenous thrombolysis with tPA via Ekos catheter and repeat stenting with two overlapping stents to the occluded veins. Overall, patient continued to have DVT with varying clinical course in spite of almost a year of anticoagulation, until she underwent angioplasty complicated by stent restenosis.

DISCUSSION: Suspect MTS in young patients presenting with unilateral left sided venous thrombosis, particularly when other risk factors and thrombophilias have been excluded, and when DVT recurs or persists in spite of optimal anticoagulation.

CV42

Lymphangioleiomyomatosis (LAM): A rare syndrome of cystic lung disease with benign renal tumor

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INTRODUCTION: Lymphangioleiomyomatosis (LAM) is a rare, progressive multisystem disease affecting predominantly women in childbearing years, arising due to mutations in TSC1/TSC2 genes, with incidence 0.2-0.3 million women/year. It is characterized by diffuse infiltration by neoplastic smooth muscle cells which invade lymphatics, vessel walls and interstitium and commonly affects lungs, pleura, kidneys, liver,and uterus. Symptoms include progressive exertional dyspnea (49%), spontaneous pneumothorax (46%), chylothorax, hematuria, recurrent miscarriages. Progressively worsening obstructive airflow disease can make it indistinguishable from asthma/COPD and is commonly misdiagnosed as one of them, until HRCT incidentally reveals the presence of lung and renal cysts.

CASE REPORT: 45 year old Caucasian lady presented with a complaint of hematuria. Workup, which included abdominal CT scan, revealed the presence of a right sided renal angiomyolipoma. Incidentally, bilateral lower lobe lung cysts were discovered. Follow up complete chest CT showed multiple lucencies, affecting both upper and lower lung lobes, consistent with cysts typical of LAM. The largest cyst measured up to 1.4 x 2 cm. Pulmonary history and exam was unremarkable with normal Pulmonary Function Tests (PFT). Based on cystic lung disease and renal angiomyolipoma, she was diagnosed to have LAM. Follow up was advised with PFTs every 3 months until at least 1 year, pneumovax and annual flu shot. Past medical history was remarkable for severe bipolar depression, multinodular goiter, pre eclampsia and 3 failed pregnancies (2 ectopic, 1 first trimester fetal demise). She continues to remain free of pulmonary symptoms at 6 months.

DISCUSSION: LAM is most commonly misdiagnosed as asthma and COPD. Angiomyolipomas are seen in >30% patients and presence of characteristic pulmonary cysts with renal angiomyolipomas in a woman is sufficient to suspect this condition. Monitoring of disease activity with serial PFTs is recommended due to progressive airflow obstruction, causing 55% patients to develop dyspnea on walking flat surfaces at 10 years and causing another 10% to be homebound.

CV43

IED: Dramatic emotions and autism

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INTRODUCTION: IED affects 7.3 % of adults -11.5-16 million- in their lifetimes. As per Diagnostic and Strategic Manual V (DSMV) criteria IED requires recurrent behavioral outbursts in which the person does not control his aggressive impulses, as manifested by either: verbal or physical aggression, at least twice weekly, over the last 3 months OR 3 behavioral outbursts involving damage to or destruction of property and/or physical assault over the last 12 months. It also requires that the magnitude of aggressiveness is disproportionate to any provocation or stressor, that the outbursts are neither premeditated nor in pursuit of a tangible objective and they cause marked personal distress, impair function or are associated with financial or legal consequences.

CASE REPORT: 39-year-old unmarried Caucasian female, a group home resident, with past history of schizoaffective disorder and autism spectrum disorder, was evaluated in our emergency department for exhibiting unpredictable behavior and being assaultive towards staff. She had multiple readmissions to psychiatric facilities in the last 6 months due to similar events. Throughout her hospital stay, she was restless, had episodes of being aggressive towards staff, hitting others and scratching herself endlessly at times, and her stay was complicated by recurrent as-

piration pneumonia, that required antibiotic therapies. Detailed medical evaluation, including urine drug screen, CT, MRI brain and a neurology consultation were negative for any organic cause of this behavior. The patient's behavior, throughout her hospital stay was unpredictable. She had episodes of calm and reasonable behavior interspersed with episodes of acute agitation and threatening to hurt self and the staff. Her mood varied with the people around her, being calm in the presence of her parents and people who were familiar to the patient, and being labile towards others who were unknown. She was started on Depakene 500 mg BID and Risperdal 0.5 mg at bedtime. While her behavior continued to be uncontrollable at times, the frequency of these episodes decreased, and continued to improve with the help of behavioral therapy. Patient showed marked improvement with the help of consistent reinforcement from the familiar staff, behavioral therapy and medications.

DISCUSSION: The above discussed patient met all the criteria for IED. The disorder is more common in age group 16-20 years, the age of onset varies in patients with autism spectrum disorders, presenting as late as 50 years of life. The management of these patients requires multidisciplinary approach, with mainstay of treatment being behavioral therapy and constant reinforcement of the positive behavior. Most cases of intermittent explosive disorder do not have a favorable prognosis.

CV44

Massive pericardial effusion as presentation of Hodgkins Lymphoma

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INTRODUCTION: Massive pericardial effusion is a rare presentation of Hodgkin's lymphoma.A literature review shows that only less than ten cases have been reported so far although minimal pleural and pericardial effusion is very common in this malignancy. We are presenting a case of Hodgkin's lymphoma which presented as massive pericardial effusion with impending Tamponade.

CASE REPORT: 30 year old female who is an ER nurse went to her doctor because she observed that her heart rate was above 100 all the time for 2 weeks associated with palpitations. She was referred to Cardiologist who noticed a pan systolic murmur between aortic and pulmonic area and did a bedside Echo for suspicion of Ventricular septal defect. Echo revealed a large loculated type of large anterior pericardial effusion and the effusion measured 3.2 cm anteriorly with mild flattening of the right ventricle in diastole. Patient was sent to ER and was admitted as a case of impending pericardial tamponade. Patient had an unremarkable past history except a self-palpated breast mass which was revealed to be benign cyst. In the ER patient was tachycardic, otherwise Vitals including blood pressure were stable. Labs are unremarkable except mild microcytic anemia. Because of the atypical nature of pericardial effusion (Large anterior loculated effusion with minimal fluid in the posterior aspect) CT scan of the chest was ordered which revealed large anterior mediastinal mass in superior mediastinum which measured 10.8*9.5*9.2 which encircled the aorta and displaced the Right main pulmonary artery. CT of abdomen and pelvis were negative. Patient had an emergent pericardial window placement with biopsy of the mediastinal mass.400 cc of serous fluid was removed and biopsies were taken from mediastinal mass. ANA, a rheumatoid screen, AFP, beta 2microglobulin, HCG and thyroid peroxidase antibodies were negative. LDH was mildly elevated. Cytology of the pericardial fluid revealed no evidence of malignancy, it showed nonspecific inflammatory cells. Biopsy of the mediastinal mass showed classical Hodgkin's Lymphoma nodular sclerosing type with Reed Sternberg cell positive forCD15, CD30, and are negative for CD20, CD3, CD45, EBV. Patient was started on chemotherapy with ABVD and was discharged home after she tolerated 1st session of chemotherapy well. During the hospital course the patient was started on beta-blocker for sinus tachycardia, which was later discontinued and patient continued to be in sinus rhythm with heart rate between 60 and 80. Patient was followed by Oncology later.

DISCUSSION: Massive pericardial effusion can be the presenting feature of Hodgkin's Lymphoma, in general malignancies with pericardial effusion has poor prognosis, but there are no studies available specifically for Hodgkin's as the presentation is extremely rare. This case also demonstrate the fact that even in young population pericardial effusion can be malignant.

CV45

An intriguing case of Splenomegaly and Pancytopenia

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INTRODUCTION: Gaucher disease (G.D.) is an autosomal recessive lysosomal storage disorder characterized by deficiency of the acid □-glucosidase, glucocerebrosidase. First described by Gaucher in 1882, the disease has prevalence of 1 in 500 in Ashkenazi Jews, and 1 in 50,000 in other races. There are three clinical subtypes, according to the absence or presence and

progression of neurologic involvement: type 1 or non-neuronopathic form; type 2, infantile-onset, acute neuronopathic form; and type 3, juvenile-onset neuronopathic form. Type 1 is the most common form of G.D and the most prevalent genetic disorder among Ashkenazi Jews. Symptoms may appear in childhood or adulthood. The disease affects almost all organs most commonly the liver, spleen, and bone. Treatment includes enzyme replacement therapy.

CASE REPORT: A 27-year-old Hispanic male originally from Mexico with no PMH presented to the ED initially with burning epigastric pain for one week. Patient was admitted after ED evaluation revealed platelet count of 40,000 and marked splenomegaly on physical examination, which was confirmed by abdominal ultrasound. On further questioning, patient reported increasing abdominal girth since a few years. Patient denied any fever, weight loss, recent travel. Social history was significant for unprotected sexual intercourse with several partners and significant alcohol use including twelve 24 ounce cans of beer almost daily since the last six years. Family history was significant for splenomegaly in father of unknown etiology. Physical examination was significant for massive splenomegaly, bilateral arm petechiae, with no hepatomegaly or lymphadenopathy. Initial labs showed mild anemia (11.7), leukopenia (3.3), and thrombocytopenia (40,000). Workup revealed elevated ACE levels, elevated ferritin, normal LDH, negative HIV and undetectable viral load. Furthermore, PPD, VDRL, ANA, Hepatitis B and C, monospot test, Coomb's test were all normal. Imaging including CT abdomen was unremarkable except some sclerosis of iliac bone. Peripheral smear revealed atypical lymphocytes and bone marrow biopsy showed wrinkled tissue paper appearing cells of G.D with infiltration of marrow with histiocytes. Flow cytometry was negative for malignancy. Confirmation of diagnosis was performed by measurement of glucocerebrosidase level. Patient was informed of diagnosis and asked to follow with a hematologist and geneticist outpatient for enzyme replacement therapy. Patient later moved back to Mexico for treatment due to financial constraints.

DISCUSSION: GD is often missed by internists due to variability of clinical features and age of presentation, as it is usually considered to be a diagnosis of pediatric age group. This case highlights the importance of considering GD, a rare disease, as a differential in adult patients with splenomegaly and pancytopenia. Early enzyme replacement can lead to reversal of clinical features and avoid complications.

CV46

Sneeze induced amarousis

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INTRODUCTION: We present the first case of a patient with recurrent amaurosis fugax (AF) induced by sneezing. He was found to have a flow limiting stenosis in the ipsilateral ophthalmic artery.

CASE REPORT: A 74 year old man with a history of hypertension and hyperlipidemia presented to the ER with a temporary loss of vision in his left eye. His CT head had no abnormalities and he was discharged home on aspirin. He had another spell of transient vision loss in his left eye a few days later and Clopidogrel was added. After this second ER visit he continued to have four to five additional spells. All but one spell were preceded by a sneeze. The first spell was described as a central darkness but for all others he noted a diffuse darkness and blurred vision. None had any altitudinal quality. Fundoscopic examination was unremarkable with no vascular changes suggestive of embolic disease vascular insufficiency. Carotid ultrasound, MRI and MRA brain were normal. After another episode he was switched to aspirin/extended-release Dypiridamole and since then has not noted any further events. A diagnostic cerebral angiogram revealed a short segment flow-limiting stenosis in the distal left ophthalmic artery, just proximal to the origin of the central retinal artery. He continues on the medication with no further spells.

DISCUSSION: We suspect that the abrupt changes in blood pressure and distal blood flow due to the Valsalva effects of a sneeze resulted in symptomatic retinal ischemia. A transient increase in intraocular pressure with a secondary decrease in retinal perfusion pressure may be another contributing factor in this situation. It is likely that these improved due to mainly the vasodilatory effect of dipyridamole.

CV47

Negative pressure pulmonary edema: A novel case of shortness of breath

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INTRODUCTION: Negative pressure pulmonary edema is commonly a post-operative non-cardiogenic edema which can result from laryngospasm or other forms of upper airway obstruction following extubation. Patients usually present with acute upper airway obstruction following extubation. Upon relief of the obstruction, patients immediately develop dyspnea with pink frothy sputum and bilateral infiltrates on

their chest radiograph. Pulmonary hemorrhage and frank hemoptysis have also been reported. It is estimated that negative pressure pulmonary edema follows 0.05 to 0.1 percent of all procedures involving intubation and general anesthesia, but is often attributed to other etiologies. Most cases are subclinical and resolve spontaneously without intervention.

CASE REPORT: Forty-three year old Spanish speaking obese male who is one hour status post bilateral TMJ surgery and has a past medical history of asthma presents to the ETD with shortness of breath(sob). EMS state that a LMA was used for the procedure and shortly after LMA extubation the patient began to desaturate down to the 70s on room air with diminised lung sounds diffusely. The Patient is complaining of right upper extremity sharp pain and sob without associated chest pain or heaviness. There is no abdominal pain or n/v/d or presyncope. The patient has no history of CHF or COPD. No allergies or rashes. No facial edema. This does not feel like his typical asthma attack. On physical exam the patient was tachycardic, tacyhpneic and hypoxic on room air. No diaphoresis. Speaking in full sentences.The chest x-ray showed diffused bilateral pulmonary edema and vascular congestion. Steroids and Lasix were given in the ETD and the patient was placed on NI-PPV with stabilization of respiratory status. Over next 3 days the patient had multiple rounds of lasix and stress dose steroids. An echo was done which was normal. Serial BNPs and Troponins were all negative. A CT-ANGIO CHEST PE Protocol revealed no evidence of Pulmonary Embolism. The patient was discharged on 12/16 with significantly improved pulmonary function.

DISCUSSION: Negative Pressure Pulmonary Edema is a non-cardiogenic pulmonary edema that is often misdiagnosed. Increasingly negative intra-thoracic pressure increases pulmonary vascular dilitation and interstitial capillar pressures leading to fluid loss to extravascular space and resultant edema. Hypoxia,d yspnea,hemoptysis,pulmonary edema and interstitial infiltrates may ensue. Most cases are subclinical and resolve spontaneously. Treatment involves supportive care, NIPPV, lasix and stress dose steroids.

CV48

Charles Bonnet Syndrome - visual release hallucinations

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INTRODUCTION: Charles Bonnet Syndrome is defined as visual hallucinations that occur in patients with visual acuity or visual field loss. Underlying conditions of vision loss can involve the eye, optic nerve or brain. Hallucinations have been reported to occur with acquired disorders affecting the visual system. It is the widely accepted theory that loss of sensory stimulation leads to disinhibition of the visual cortical regions which causes spontaneous firing. The brain fills in the gaps by releasing new pictures or patterns that it has stored as hallucinations. Hallucinations can begin weeks to months following deterioration of sight. Hallucinations often resolve if the underlying vision deficit is corrected. However, emotional distress may result from these hallucinations requiring treatment.

CASE REPORT: RM is a 61 year old legally blind, African-American male, single, residing alone, supporting himself on disability. He presented with distressing visual hallucinations and was diagnosed with Charles Bonnet Syndrome. He has no prior psychiatric history. He was in rehab for alcohol and cocaine use in 1995. His medical history is significant for hypertension and visual impairment since 2007. Symptoms began five months ago when he was watching television and suddenly saw elephant trunks, cars, pigs, monsters and fire. Right eye cataract removal was done three months later but visual hallucinations persisted. On further exam, optic nerve atrophy was diagnosed. Prognosis was poor for regaining vision. He reported constant hallucinations even while he slept. He felt that the hallucinations were attacking him and "stinging" him. He had become increasingly fearful and anxious of the hallucinations and expressed his emotions in anger and irritability. He denied auditory hallucinations. He denied depressive or manic symptoms, suicidal or homicidal ideations, intent or plan. He was awake, alert and oriented to person, place and time and his insight and judgment was fair. He was diagnosed with Adjustment Disorder with Disturbance of Emotion and Conduct and Charles Bonnet Syndrome. His lab work was reviewed and within normal limits. He was started on Valproic Acid ER 250mg daily and titrated up to 750mg daily. He became less disturbed and irritated with his persistent visual hallucinations. He had improvement in his daily activities and was sleeping and eating better. He was less impulsive and frustration tolerance had improved. The "stinging" sensation described required further workup as tactile hallucinations are not consistent with Charles Bonnet Syndrome. He was referred to a neuro-ophthalmologist and sent for a CT scan to further assess his visual deficit and tactile symptoms.

DISCUSSION: Charles Bonnet Syndrome is often misdiagnosed. Testing for cognitive and neurological deficits should be done. Reassurance that hallucinations are not related to psychosis has provided

comfort. Disturbance of daily activities require treatment. Case reports showed resolution of symptoms with anti-psychotics, cholinesterase inhibitors and anti-epileptic drugs. In this case, Valproic Acid alleviated impulsivity, decreased irritability and improved daily functioning with no reported side effects.

CV49

New onset schizophrenia

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INTRODUCTION: Schizophrenia is a mental illness with tragic implications for the mind and long standing effects on the body. It is characterized by a constellation of active symptoms, including bizarre delusions (i.e., false beliefs) and visual or auditory hallucinations. Others positive symptoms include bizarre behaviors and disorganized speech while negative symptoms include alogia, anhedonia, flat affect, negative attitude, and absent movement. Active symptoms must be present for a minimum of one month with prodromal and/or residual symptoms comprising the remaining five months of the required six month period. Diagnosis is dependent on the patient's observed behaviors as well as their reported experiences. These experiences often transpire during the formative years of a patient's life.

CASE REPORT: The patient is a 30 year old African-American male, unmarried, employed as a home health aide, with no documented psychiatric history, living with mother and two uncles. He was brought involuntarily for psychiatric evaluation for psychosis, bizarre behavior, and illogical thinking. During interview, the patient stated that he had become increasingly convinced that his neighbor was plotting against him. The patient stated that he first started having issues with his neighbor three years ago when his neighbor began placing "crickets" in his basement in order to "drive me crazy". Three months ago, the neighbor got a small dog, which the patient believed was obtained to bark all day and night at him. After a confrontation, the neighbor stated that the patient was likely "going crazy", which the patient interpreted as the neighbor saying that he was "going to make me crazy." The patient also began to believe his neighbors were sending people to follow him in vehicles that would chase him on the highway. The patient demonstrated this incident to me using a pair of playing cards he had laid out on his mattress. In one incident, the patient managed to confront one of these alleged drivers, causing a minor incident in a parking lot. The patient's delusions weren't limited to his neighbors though as he believed that people at work were clicking their pens and clearing their throats in order to annoy him as well, and that others were being confrontational in order to "prevent me from being successful". The patient admitted to drinking excessive amounts of alcohol, although this was a recent development, and also to having an uncle who "talks to himself" and who acted in bizarre ways. He also admitted to assaulting his mother several months ago. The patient denied suicidal or homicidal ideations. On presentation, he was cooperative, with a slow, pressured speech, and flat affect. His judgment was deemed to be impaired and his impulsivity high. The patient was started on Risperdal 1 mg at bedtime, which was switched to Seroquel 50 mg bedtime in order to reduce anxiety and encourage sleep at night. This dose was titrated to 200 mg over several days. Since his insight remained poor, he was sent to a long-term care facility.

DISCUSSION: This patient presents with paranoid delusions and bizarre behaviors, as well as a flat affect, a lack of motivation, and an inability to find pleasure in activities, all of which, taken together, are features of Schizophrenia. His early symptoms of social withdrawal and paranoid delusions could demonstrate a prodromal period, whereas his current delusional state and bizarre behavior, which had occurred for greater than one month, could form the active phase.

CV50

Fever, neck pain and neck stiffness ≠ meningitis pediatric group A streptococcal cervical osteomyelitis: A case report

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INTRODUCTION: Fever, neck pain and neck stiff ness in children may or may not equal meningitis. Symptoms may include fever, headache, photophobia, nausea, vomiting, confusion, lethargy, and/or irritability. Absences of symptoms are equally important in the clinical decision process. A systematic review of the case leads a physician in the correct path. Osteomyelitis is an infection of the bone caused by hematogenous spread of bacteria. Here we present a case of 4-year-old boy who presented to our ED with fever, neck pain and neck stiff ness, was confused to have meningitis; instead he had cervical osteomyelitis.

CASE REPORT: A 4-year-old Hispanic boy presents to the emergency department for evaluation of fever and neck pain of 48 hours and one day of Augmentin for strep throat. On arrival the patient was awake and alert, ill appearing, crying when he moved his neck and hot to touch. Initial vitals were temp 40.8C, HR 180, RR 30. Review of systems were positive for decreased activity, oral intake and urination, negative for sore throat, cough, runny nose, rash, nausea, vom-

iting, or diarrhea. Past medical history is significant for asthma. On physical exam, the patient was ill appearing, febrile, dehydrated staying still, trying not to move his neck. Significant findings in the physical examination are: enlarged, erythematous, non-exudative tonsils, small tender cervical lymph nodes, Midline cervical spinal tenderness as well as paraspinal muscle tenderness with spasm and decreased range of motion secondary to pain. Neurological exam was normal. The initial differential diagnosis was soft tissue infection of the neck, tonsillo-pharyngitis, parapharyngeal abscess and or retro-pharyngeal abscess, osteomyelitis and meningitis. Labs showed: Positive rapid strep, elevated WBC, CRP and ESR. Ultrasound of the neck and a CT of head and soft tissue of the neck with contrast did not demonstrate any discrete infective processes. CSF analysis is normal with out bacteria on the gram stain. With this negative preliminary CSF, the ED physician ordered MRI of the cervical spine with and with out contrast, which demonstrated 2.2 cm x 1.4 cm abscess inferior to the arch of C1 with inflammation from the occiput through to the level of C2. Final CSF cultures were negative, where as blood cultures grew Group A *streptococcus pyogenes*. On hospital day 1 patient received Clindamycin, after sensitivities were resulted, antibiotic was changed to penicillin. The patient continued to improve over his nine-day hospital stay. PICC line was placed to facilitate ceftriaxone therapy as an outpatient for 6 weeks. Repeat MRI at seven weeks showed resolution of the abscess. At the time of follow up, the patient made a full recovery.

DISCUSSION: With the current infant immunization schedule the incidence of bacterial meningitis declined in all age groups except children younger than two months. Osteomyelitis is an infection localized to bone usually from the hematogenous spread of microorganisms. Other pathogenic mechanisms include direct inoculation or local invasion from a contiguous infection. If child has fever, neck pain, neck stiffness with absence of other neurological symptoms one has to think of other infectious etiologies.

CV51

Recurrent focal electrographic seizures refractory to treatment in a patient with subacute encephalopathy and seizures in alcoholics (SESA)`

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INTRODUCTION: A few cases of subacute encephalopathy and seizures in alcoholics (SESA) have been reported since described by Niemeyer in 1981. SESA is characterized by confusion or lethargy, transient motor deficits, seizures in patients with history of chronic alcoholism. The pathophysiology of SESA remains unclear, but it was proposed that chronic small vessel disease involving epileptogenic brain regions may predispose to development of focal seizures in some of these patients. We report a patient with subacute encephalopathy and seizures in alcoholics (SESA) showing lateralized periodic discharges (LPDs, also termed PLEDs) on continuous EEG monitoring (CEEG), which evolved to nonconvulsive status epilepticus (NCSE) despite treatment with multiple antiepileptic drugs (AEDs).

CASE REPORT: This is a 75 years old right-handed man, with significant history of chronic alcoholism. The patient was brought to the ER confused and having focal motor seizures involving right face, arm and leg. He also had right hemiparesis. Head CT and brain MRI (Fig. 1) showed volume loss and small vessel disease type changes. He became more confused and agitated over the next hours. Lumbar puncture was done. CEEG showed LPDs over the left posterior temporal region. He was then transferred to ICU and was given Acyclovir and loading doses of Fosphenytoin. The results of extensive blood work were negative. Except for mild increase in protein (59), comprehensive CSF study was negative, including but not limited to viral, bacterial, and fungi cultures, PCR for herpes simplex, paraneoplastic panel and anti-NMDA receptor antibody. At this point SESA was the most likely diagnosis. Patient developed rash, therefore Fosphenytoin was discontinued and Sodium Valproate was started. CEEG was showing left-sided LPD and recurrent focal electrographic seizures arising from the left temporal region (Fig. 2). Lacosamide and then Ketamine were added, but without therapeutic response and subsequent NCSE was diagnosed. Ketamine was then switched to Midazolam to the goal of burst suppression. Over the next days, the patient could be weaned off Midazolam. He remained lethargic but was responsive to few verbal commands. However, his family decided for withdrawal of care.

DISCUSSION: SESA is likely an underreported and under diagnosed condition. Our patient presented with focal motor seizures followed by Todd's paralysis, and encephalopathy. The CEEG showed left posterior temporal LPDs and recurrent focal electrographic seizures. Despite treatment with multiple AEDs and the addition of ketamine, both encephalopathy and seizure severity worsened.

CV52

A case of Pheochromocytoma with an unsual presentation

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INTRODUCTION: Pheochromocytomas are rare, neural crest-derived neoplasms, produced from chromaffin cells that store, metabolize, and secrete catecholamines, with an incidence of 1-2 cases per 100,000 in the United States. Adrenal incidentaloma (AI) is any adrenal mass ≥1cm, discovered unintentionally by abdominal imaging studies. It is estimated that 4-10% of pheochromocytomas present as Adrenal incidentaloma.

CASE REPORT: We present a case of a 46 year-old Hispanic female with no significant past medical history, who presented to our outpatient clinic complaining of intermittent epigastric pain with radiation to the back and the right shoulder, not related to food. She denied fever, chills, headaches, chest pain or palpitations. Initial examination revealed an afebrile, normotensive patient with minimal epigastric tenderness, absent Murphy's Sign, rebound or guarding and no costo-vertebral angle tenderness. Initial laboratory showed mild leukocytosis of 11,500 /UL with no left shift, normal basic metabolic profile, normal lipase level and normal urinalysis. Ultrasound of the abdomen ruled out cholelithiasis or cholecystitis. Computerized tomography (CT) of the abdomen with contrast showed normal pancreatic anatomy and incidental right adrenal mass of 3 x 2.7cm and attenuation of <10 Hounsfield units. Further evaluation with abdominal magnetic resonance showed a 3.4 x 3.0 cm right adrenal nodule with no macroscopic fat and lack of loss of signal intensity on out-of-phase compared to in-phase images. After one year, she returned to our clinic with persistent abdominal pain, lower back pain and unchanged physical examination. A repeat CT scan of the abdomen showed increased size of the right adrenal mass to 7cm. Laboratory work-up showed normal levels of aldosterone, renin, morning cortisol and adrenocorticotropic hormone (ACTH); however elevated total chatecholamines with norepinephrine 5844pg/mL (n=112-658pg/mL), epinephrine 89pg/mL (n<50 pg/mL), dopamine 225pg/mL (n<10pg/mL) and elevated free plasma normetanephrine of 3446pg/mL (n<148 pg/mL) confirmed the diagnosis of pheochromocytoma, for which she underwent surgical removal.

DISCUSSION: This case of pheochromocytoma in a normotensive patient with absence of the classic triad of episodic headache, sweating, and tachycardia; with benign radiologic characteristics of the adrenal mass, illustrates the importance of having a high clinical suspicion when approaching any patient with AI. In fact, biochemical evaluation for hormonal hypersecretion should be done in any case of AI, in order to rule out a serious tumor with life-threatening complications such as pheochromocytoma.

CV53

A case of recurrent acromegaly: Medical management of the disease

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INTRODUCTION: Acromegaly is a rare, chronic, insidious disease characterized by overproduction of growth hormone (GH) and its tissue mediator insulin-like growth factor 1 (IGF-I) typically from a pituitary adenoma. Approximately 3 to 4 cases of acromegaly per million population are newly diagnosed every year. Transsphenoidal microsurgery remains the first line of treatment, but the cure in acromegaly is mainly biochemical, indicated by normalization of GH below 2.5ug/L, GH suppression to 1ug/L during an Oral Glucose Tolerance Test (OGTT) and IGF-1 level normalization for age and gender. Recurrent acromegaly is established by GH hypersecretion after initial biochemical cure, and is even rarer than the disease itself, reported in only 2 to 3% of the cases

CASE REPORT: We present a case of a 44 year-old Hispanic male with a past medical history of acromegaly diagnosed 20 years ago. He was initially treated with transsphenoidal microsurgery in 1995 and open brain surgery in 1997. He was lost to follow up and presented to our outpatient clinic 18 years later complaining of frequent headaches with nose and hands enlargement. Further questioning revealed that he was also having significant debilitating lower back pain, decreased left sided vision and erectile dysfunction. These symptoms were impairing his daily activities and social life, to an extent that he would avoid any exposure to friends or family. Even though he did notice some changes to his face, they occurred gradually and only noticed them when they were very obvious. Physical examination revealed an overweight male patient with a height of 75 inches, enlarged nose, lips, splayed teeth, coarse facial features, macroglossia, enlargement of both hands and hyperhidrosis of his palms. Ophthalmologic evaluation revealed left nasal hemianopia. Laboratory work up confirmed the diagnosis of recurrent acromegaly with high fasting IGF-I level of 833ng/mL. MRI of the brain showed a 4.3 x 3.8 cm pituitary macroadenoma with extensive suprasellar extension and optic chiasm compression. He was evaluated by neurosurgery, but the patient refused any surgical intervention. Medical treatment with Octreotide LAR 30mg every four weeks

was started immediately. After the second dose, the patient reported improvement of his back pain and decreased hyperhidrosis. A repeat IGF-I level after 2 months of therapy was 826ng/mL (52-328ng/mL) and 542ng/mL (52-328ng/mL) after 5 months of therapy, with normal transaminases and no side effects. Even though his symptoms were still present during his last follow up visit, the patient had been able to tolerate his daily activities at home.

DISCUSSION: This case shows the importance of follow-up after any surgical or medical intervention in acromegaly. Recurrence is possible and these patients have been identified as a subset of patients that can be difficult to manage. Close monitoring with IGF-I and GH levels is crucial to diagnose and treat recurrence of the disease and its comorbidities. Somatostatin analogues have proven to be effective in cases like ours, yet its efficacy varies among studies.

CV54

An unusual cause of lymphadenopathy in sickle cell disease

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INTRODUCTION: Sickle Cell Disease (SCD) is due to a point mutation in the β-globin chain resulting in hemoglobin S. Red blood cell transfusions (RCT) are the mainstay in treatment of acute and chronic complications of SCD. Secondary hemosiderosis (SH) is an uncommon, yet possible complication in these patients. The inflammatory state in SCD results in the release of Interleukin-1 and Interleukin-6, decreasing iron absorption and enhancing iron retention in the reticulo-endothelial system through hepcidin induction. SH in SCD is commonly found in the liver, joints, skin, and kidneys; rarely involves the cardiac or endocrine systems.

CASE REPORT: We present the case of a 25 year-old African-American female with past medical history of SCD and chronic deep vein thrombosis (DVT) of the left upper extremity (UE). Due to her severe vaso-occlusive crisis since childhood, she has chronically received RCT. She presented to our hospital complaining of diffuse joint pain and swollen left UE for two days. She denied trauma, fever, chest pain or respiratory distress. On examination, conjunctival pallor and diffuse joint tenderness was observed. Initial blood work showed hemoglobin of 7.4G/dL and reticulocyte count of 7%. She was started on intravenous fluids, hydromorphone, folic acid and serial hemoglobin and reticulocyte count monitoring. On day five of admission, physical examination revealed non-tender, mobile left supraclavicular mass not present initially. Computerized tomography of the neck with contrast revealed cervical, bilateral supraclavicular, hilar and mediastinal lymphadenopathy. Due to possible sarcoidosis in the setting of generalized lymphadenopathy, angiotensin converting enzyme level was sent and resulted normal. Lastly, excisional biopsy of the left supraclavicular node reported lymph node sinus and follicular centers to be populated with pigmented macrophages accompanied by plasma cells with Prussian blue stain positive for iron. Subsequent serum ferritin level was found to be 1,487ng/ml.

DISCUSSION: Chronic RCT reduces stroke incidence in SCD as well as hemolytic crisis. This is an unsual case of iron deposition in lymph nodes secondary to RCT. This has not yet been reported in literature, making our case unique. We illustrate the importance of understanding the indications of RCT in SCD patients in order to avoid SH and its many life-threatening complications. High clinical suspicion is required, as serum ferritin offers poor correlation to actual end-organ damage by iron deposition.

CV55

Should we blame it on Metformin?

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INTRODUCTION: Metformin has a broadly recognized effectiveness as an antihyperglycemic agent. Its precursor phenformin, was removed from the market after 306 documented cases of drug-associated lactic acidosis. Ever since, the controversial debate about whether metformin is a causative agent of lactic acidosis remains open. The reported incidence of 4.3 cases per 100,000 person-years, includes all situations used to depict lactic acidosis in the setting of metformin therapy. "True" metformin-associated lactic acidosis is hardly encountered in medical reports. Multiple comorbidities can mask the genuine cause of elevated lactate. This is the case of a diabetic patient on metformin, presenting with unexplained lactic acidosis in the setting of normal renal function.

CASE REPORT: A 59 year old male presented with acute exacerbation of COPD. His past medical history included diabetes mellitus type 2 treated with metformin 500 mg bid, hepatitis C, hypertension, CAD and rheumatoid arthritis treated with sulfasalazine. Physical examination revealed distant breath sounds, and normal cardiac exam. Laboratory measurements demonstrated a combined respiratory alkalosis with metabolic acidosis and lactate levels of 9.0. Creatinine on admission was 0.7, and liver function was within normal limits. He was treated with nebulizers, oxygen and fluid resuscitation, with subsequent reso-

lution of the symptoms. The patient didn´t show any signs of hypoperfusion or alcohol abuse. His thiamine levels were within the normal range. Urinalysis was negative for ketones. He didn't have any symptoms of salicylate or sulfasalazine intoxication. Metformin was discontinued and his lactate levels returned to normal within 48 hours. The patient was discharged with the diagnosis of COPD exacerbation and metformin-induced lactic acidosis.

DISCUSSION: Multiple controlled trials have failed to support the link between metformin and lactic acidosis. However, clinical cases continue to show the possibility of a real association, even in the setting of normal renal function. Given the literature discrepancy, more research will be necessary in order to define metformin as a clear etiology of lactic acidosis.

CV56

Not your typical sinusitis

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INTRODUCTION: The most common cause of sinusitis is bacterial, while fungal infections are usually associated with states of immunodeficiency. The infrequency of this type of infection in immunocompetent patients delays it´s early inclusion in the differential diagnosis. Consequently, adequate treatment is only administered after multiple therapeutic interventions have failed.

CASE REPORT: This is a case of a 72 year old male who underwent a dental procedure complicated by gingival infection. He was treated with a course of Amoxicillin for 7 days and the symptoms resolved. Two weeks later he presented with acute sinusitis and was treated with another short course of antibiotics, showing modest improvement. Over the following months, the pain persisted, and the patient underwent multiple therapeutic interventions. These included antibiotic therapy with cephalosporins, clindamycin, trimethoprim-sulfamethoxazole, and also rhinoscopy, without complete resolution of the pain. Eventually he was diagnosed with trigeminal neuralgia and started on neuromodulators. A few months later, he presented to the hospital with excruciating right craniofacial pain, affecting his right eye, maxillary area, upper dental arcade and temporo-mandibular joint. The pain was worse with mastication and palpation. On examination, he demonstrated significant palpebral edema, erythematous conjunctiva, and clear liquid discharge. There was soft tissue edema over the right side of the face, without evident proptosis, nasal polyposis or anatomical abnormalities. He was afebrile and with stable vital signs. Laboratory workup revealed normal white blood cell count, normal eosinophils and increased ESR and CRP. Sinus CT scan showed opacification of the right maxillary sinus with destruction of the infraorbital floor and maxillary bone. MRI revealed chronic inflammatory changes extending into the retromaxillary space, and stigmata of subacute denervation injury. The patient was started on broad spectrum antibiotics and underwent explorative sinus procedure with debridement and retrieval of bone with tissue sample. Pathological report revealed abundant fungal growth with chronic osteomyelitis. Final reports showed *Aspergillus fumigatus* as the cause of chronic inflammatory sinusitis. After three weeks of hospitalization, he was finally started on antifungal therapy. Just a few days later he was discharged on oral Voriconazole with almost complete resolution of the symptoms.

DISCUSSION: Rarely clinicians consider the possibility of fungal infection in a healthy non-diabetic male without any signs of immunological dysfunction. This case illustrates the value of developing a broad infectious differential, even in the setting of intact immunity. Prompt recognition of fungal infection is critical to institution of early appropriate therapy and avoidance of multiple invasive interventions.

CV57

Chronic conversion disorder with a psychological stressor

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INTRODUCTION: Conversion disorder (known as Functional neurological symptom disorder in the DSM-V) involves one or more symptoms of altered voluntary motor or sensory functions, but without clinical findings providing evidence of compatibility between the symptom and recognized neurological or medical condition. The symptoms are not better explained by a medical or mental disorder; and symptoms cause clinically significant distress and/or impairment in social, occupational, or other important areas of functioning. It can be an acute or chronic condition, and can be specified with or without a psychological stressor.

CASE REPORT: Pt is a 47 year old married, employed Egyptian female with no prior psychiatric history, and past medical history of varicose veins came in voluntarily to the adult outpatient unit for a psychiatric evaluation. Pt was referred by her primary medical doctor to obtain an evaluation as her symptoms were reportedly psychological and not medical. Patient complained of several somatic symptoms, including pain in her arms/legs, numbness on a unilateral side of her face, and diffuses muscle stiffness. Several pri-

mary care doctors and neurologists saw and evaluated the patient who gave her treatment with steroid treatments, vitamins, and injections, but her symptoms did not subside. Patient underwent extensive testing including blood work, CT/MRI's of her brain, urine drug screens, were ordered to rule out any organic cause of the patient's symptoms, but will testing was within normal limits. Pt reports that these symptoms began about four years ago when the patient arrived the to United States from Egypt. Pt had to leave her eldest son (27 years old) in Egypt because he was denied entry by the embassy into the States. Pt ruminates about her son, stating he is her best friend, and her mood became depressed and tearful when describing their relationship. Pt is preoccupied with getting her son to the United States, and continuously ruminates about it. Pt reports whenever she gets upset about her son not being with her, her neurological symptoms worsen. Pt states her symptoms began a few years ago when she arrived here.

DISCUSSION: The disorder has been reported in patients of all ages, but usually rare before age 10. The prognosis is generally poor. Some factors associated with a poor outcome include multiple physical symptoms, long standing symptoms, poor physical functioning, co morbid personality disorder, beliefs that symptoms are irreversible, and illness related financial benefits. First line treatment includes educating the patient, cognitive behavioral therapy, and physical therapy can be added.

CV58

Progressive dysphagia-alarming, but not always malignant

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INTRODUCTION: Dysphagia is defined as a subjective sensation of difficulty or abnormality of swallowing. Dysphagia is an alarm symptom that warrants immediate investigation of its cause and appropriate treatment as soon as possible. Progressive dysphagia-dysphagia that begins with dysphagia only to solids and then progresses to solids arises concern for malignancy; however esophageal rings and webs can also be a benign culprit of this alarming symptom.

CASE REPORT: 71 year old Cuban female with past medical history of hypertension and anxiety admitted for progressive dysphagia. Symptoms started about one year prior to presentation with intermittent difficulty swallowing solids, progressively worsening, with frequent chocking and coughing on food. Two days prior to presentation she began developing dysphagia to liquids as well. She reported numerous episodes of regurgitation of water plus viscous fluid shortly after swallowing. She denied any weight loss, melena, odynophagia, heartburn, changes in appetite or previous EGD or gastrointestinal investigations. She denied trying any medications to relieve these symptoms nor has she seen a physician in regards to these symptoms. She did report some improvement of symptoms with consumption of mint candies. Labs were within normal limits. CT neck revealed dilated proximal esophagus filled with fluid. Abdominal series was also done which was negative for any obstruction. An echo was done which ruled out any extrinsic atrial impingement on the esophagus. Patient was admitted for further investigation of her dysphagia with concern of possible esophageal malignancy versus esophageal ring or web. Gastroenterology was consulted to perform endoscopy. Esophagogastroduodenoscopy (EGD) revealed Schatzki's ring in the gastroesophageal (GE) junction measuring 12mm in diameter. Dilatation was performed and biopsies were taken. Mild gastritis was found in antrum of stomach as well as multiple polyps in body of stomach. Patient was started on Protonix 40mg daily and discharged home when tolerating PO diet. Biopsies from EGD returned positive for chronic gastritis in antrum, negative for *Helicobacter pylori*, and fundic gland polyps in body of stomach were negative for dysplasia or carcinoma. EGJ showed squamocolumnar junction with fibrinopurulent debris and severe acute inflammation consistent with ulceration and negative for metaplasia, dysplasia or carcinoma.

DISCUSSION: Progressive dysphagia, although an alarming sign for malignancy can be frequently caused by esophageal strictures or webs. As this case portrays, patients with lack of symptoms commonly associated with malignancy such as weight loss or anemia may benefit from EGD. EGD should be performed as initial diagnostic procedure as it allows visualization of the structural abnormality causing symptoms, access to tissue samples for biopsy, and opportunity to provide treatment of symptoms via dilatation.

CV59

Anticoagulation for atrial fibrillation in thyroid storm

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INTRODUCTION: Although there are many guidelines for the treatment of atrial fibrillation and the role of anticoagulation, the recommendations for anticoagulation in atrial fibrillation in the setting of thyroid storm are not so clear-cut. One of the most common tools we use to help estimate the risk of embolism in

patients with atrial fibrillation is the CHA2DS2-VASc-score. There are no recommendations available for the appropriate use of this score in patients in thyroid storm, however the guidelines favor treatment with anticoagulant medication in the absence of a specific contraindication for patients in thyroid storm, at least until a euthyroid state has been restored and heart failure has been cured.

CASE REPORT: 25-year-old African-American male with past medical history of hyperthyroidism as adolescent, untreated for 13 years secondary to noncompliance admitted to the hospital in thyroid storm and atrial fibrillation with rapid ventricular rate (Afib with RVR). On admission, patient had Buch & Wartosfky Score of 60, suggestive of thyroid storm. TSH was 0.00, T3 4.29 and Free T4 8.50. Patient was originally admitted to the ICU. He was started on methimazole 30mg daily and Propranolol 20mg q8h. At the time of admission his CHA2DS2-VASc-score was 1, secondary to only hypertension, and started on aspirin 81mg daily. Echocardiogram done during hospital course revealed dilated cardiomyopathy with reduced EF of 45-50%, as well as moderate mitral regurgitation and tricuspid regurgitation. This increases the patients CHA2DS2-VASc-score to 2 and patient is switched from aspirin to warfarin for anticoagulation. On Day 2 of hospital course, patient awoke in the middle of the night with severe abdominal pain out of proportion to physical exam, with nausea and emesis. A CT abdomen/pelvis was done the following day on Day 3, which showed 2 wedge-shaped hepatic infarcts in right lobe measuring 6.2cm and 2.7cm as well as 4.2cm wedge shaped infarct of left kidney and 1.9cm wedge shaped infarct of right kidney. Patient continued to be treated with warfarin and heparin until a therapeutic INR was established and then he was maintained on warfarin. His abdominal pain and associated symptoms resolved. Symptoms were controlled and patient was discharged on methimazole 30mg, warfarin 4mg, propranolol 60mg QID, lisinopril 5mg daily.

DISCUSSION: About 30-40% of patients in thyroid storm are found to be in atrial fibrillation. Unfortunately studies have shown about 50% of deaths from thyroid storm were also found to be in atrial fibrillation. As seen in this case report, it is important to initiate anticoagulation early on in patients in atrial fibrillation and thyroid storm, regardless of CHA2DS2-VASc-score.

CV60

Post Transfusion Purpura (PTP) - A rare phenomenon

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INTRODUCTION: Post-transfusion Purpura (PTP) is a rare transfusion reaction that may occur after transfusion of any platelet-containing product. Patients with PTP present with severe thrombocytopenia (≤20,000) approximately 5 to 10 days following transfusion. However, post transfusion purpura has been reported as early as 24 hours after transfusion. The thrombocytopenia often lasts for days to weeks in these patients. HPA-1a is the antigen implicated in this condition. Diagnosis of this condition is made by positive HPA-1a antibody in serum of the patient

CASE REPORT: A 40 year African-American female was admitted to the hospital for epigastric pain. She also reported one episode of hematemesis. On admission, vital signs were within normal limits. The only positive finding on examination was epigastric tenderness. Complete blood count (CBC) revealed hemoglobin of 6.5g/dl, MCV 89.2 and Platelets 177,000/mL. Upper endoscopy revealed a large duodenal ulcer. The patient was upgraded to the intensive care unit and two units of packed red blood cells were transfused. On post transfusion day 2, platelet count dropped to 44,000/mL but the patient remained hemodynamically stable. No petechiae, purpura or signs of active bleeding was present on examination. Initially the drop in platelet count was thought to be a side effect of omeprazole, so it was discontinued. Hematology was consulted and peripheral smear was reviewed. There was no evidence of platelet clumping or schistiocytes. On hospital day three, the platelet count dropped further to 25,000/mL. At this point, other differential diagnosis including Disseminated Intravascular Coagulation (DIC) and Immune Thrombocytopenic Purpura (ITP) were ruled out. PTP was considered to be the most likely cause of the dropped platelet count as it occurred after blood transfusion. Human platelet antigen 1a (HPA-1a) antibodies were sent and intravenous immunoglobulin G was started. Repeat complete blood count next day showed a platelet count of 77,000 and there was continual improvement throughout the hospital course. The patient was discharged with a normal platelet count few days later.

DISCUSSION: Consider PTP whenever there is sudden, severe, unexplained drop in platelet count in hospitalized patient after a transfusion of any blood product. In this case, post transfusion Purpura was determined to be the most likely cause of thrombocytopenia after ruling out other common etiologies like DIC, ITP.

CV61

Endovascular mechanical embolectomy for acute middle cerebral artery occlusion following cardiac surgery: report of two cases

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INTRODUCTION: Stroke is one of major cardiovascular events that complicate cardiac surgery. Endovascular mechanical embolectomy is reported to restore cerebral blood flow in large intracranial vessel occlusion where thrombolytics failed or were contraindicated. We recently introduced this procedure at our institution.We report our experience with the first two post cardiac surgery cases.

CASE REPORT: Case #1 was an 82-year-old male in chronic Atrial fibrillation that had uneventful triple CABG and AVR. Four days postoperatively he developed acute-onset aphasia and right hemiparesis. Head CT angiogram showed LMCA M2 occlusion. Emergency transfemoral mechanical embolectomy using Trevo stent retriever and Penumbra 5 ACE Max thrombectomy suction system was done. Case #2 was a 55-year-old male who had sextuple CABG. Three days postoperatively he developed chest tightness with ECG changes, taken for coronary angiogram, which noted patent grafts and small non-stentable diagonal branch. Following the procedure, he developed acute-onset aphasia and right hemiplegia. CT angiogram showed LMCA M2/M3 occlusion. Penumbra 5 Max ACE and Trevo catheter were used for transfemoral embolectomy. Embolectomies were performed within four hours of onset of symptoms without device or patient-related complications. Case #1 had gradual resolution of neurologic deficits with complete resolution of hemiparesis upon discharge to rehabilitation facility on postoperative day 20. Case #2 had complete resolution of aphasia and right hemiplegia upon home discharge on postoperative day 11.

DISCUSSION: Endovascular mechanical embolectomy is safe and effective treatment for stroke syndrome following cardiac surgery. Complete resolution of acute-onset neurologic deficits could be achieved when intervention is done immediately. This is primarily indicated in patients who cannot medically treated with tPA, because of anti-coagulation problems, recent surgery, or stroke or head injury in the past three months.

CV62

Novel treatment of severe malaria in the emergency department utilizing artesunate and exchange transfusion

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INTRODUCTION: Tropical infections such as Zika virus, malaria, West Nile virus, dengue fever and most recently, Ebola are appearing with more frequency in patients presenting to emergency departments in the United States. We describe the case of a previously healthy 33 year old male pilot recently arrived to the US from Africa. The patient presented to our emergency department febrile, disoriented, with projectile coffee-ground emesis. He was later found to have severe malaria with cerebral parasitemia. Due to the severity of his illness, 42% parasitemia, the patient received the novel anti-malarial medication Artesunate via exchange transfusion. Within less than 48 hours his parasitic load was reduced from 42% to 0.4%. The following is an account of a collaborative effort that spans the specialties.

CASE REPORT: The patient is a 33-year-old pilot recently arrived to the United States from Africa. He was found wandering around his hotel naked, disoriented, febrile, with projectile coffee-ground emesis. His employer verifies that the patient arrived from South Africa two weeks ago. His flight history for the past two months had been limited to the Congo and South Africa. He had not traveled to West Africa, has had no sick contacts and was in good health prior to leaving Africa. He is brought into the ED. Initial vital signs yield the picture of a critically ill patient, blood pressure of 118/58 mm Hg, heart rate of 170 beats/min, respiratory rate of 44 breaths/min, oxygen saturation 98% on 15L/min supplemental O2, and temperature of 105.5°F. The patient was not opening his eyes, not speaking, and made no movements. Physical exam was remarkable for coffee-ground emesis on his face, dry mucus-membranes, tachycardia, and tachypnea. The patient was immediately intubated and placed on a mechanical ventilator. A triple-lumen-catheter was inserted into his right subclavian vein to provide intravenous access. Two liters of normal saline were administered. Cooling blankets and icepacks were applied. Oro-gastric and temperature catheters were inserted. The patient was empirically started on medications cover for severe sepsis, gastritis, meningitis, encephalitis, and malaria. These include: dexamethasone 10mg, vancomycin 1g, ceftriaxone 2g, acyclovir 650mg, quinidine 650mg, octreotide 500mcg. Initial laboratory results revealed anemia and thrombocytopenia. Malaria parasites were found on malaria prep

in 42% of red blood cells. The patient was started on the investigational drug artesunate which reduced his parasite load from 42% to 0.4%..

DISCUSSION: The combination treatment of artesunate and exchange transfusion was extremely successful in clearing the parasitemia in this very ill patient. The patient is now normal. The use of ET, in conjunction with an appropriate antimalarial agent, should be considered in any severely ill malaria patient.

CV63

Complicated abdominal pregnancy with placenta feeding off sacral plexus and subsequent Multiple ectopic pregnancies, during a 4 year follow up - a case report

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INTRODUCTION: Abdominal pregnancies are rare types of ectopic pregnancies with high rates of maternal morbidity and mortality when encountered anywhere in the world. The prevalence of ectopic pregnancy among women who go to an emergency department with first trimester bleeding, pain, or both ranges from 6 to 16 percent. These pregnancies can go undetected until an advanced fetal age and often result in severe hemorrhage. Rates of maternal mortality here have been reported as high as 20 percent and early strategic diagnosis can make a critical difference with regards to severity of morbidity and mortality risk. Upon extensive search of medical literature, we are unaware of any case of abdominal pregnancy in which the placenta was receiving its vascular supply from the sacral plexus.

CASE REPORT: A 26-year-old African-American female, primigravida, at 16 weeks 4 days gestation, presented to the ED with increasing abdominal pain and a positive home pregnancy test. Patient admitted that she had not been receiving prenatal care. She described 3/10 (mild) bilateral abdominal pain but denied any vaginal bleeding, nausea, vomiting, headache, fever, chills, dysuria or hematuria. Patient reported 1-2 weeks of severe constipation, but denied any melena or hematochezia. At the time of ED presentation she was not on any medications. She had a one pack per week smoking history but denied any alcohol or other drug use. She reported being sexually active with one partner. Patient further mentions that she was at a nearby hospital where pregnancy was confirmed. Physical exam was only significant for a soft, non-distended abdomen, with mild diffuse lower abdominal tenderness maximal in the left lower quadrant of abdomen; Pelvic exam, including a speculum exam documented a normal appearing cervix, no active bleeding, adnexa non tender, bimanual exam confirmed cervix was closed and uterus was enlarged, approximately 8 week size.MRI: Intra-abdominal ectopic pregnancy with the placenta connected to the sacral plexus. Transvaginal ultrasound (TVS) as well as abdominal CAT scans with and without contrast showed, uterus measuring 9.0 x 5.8 x 8.2 cm; No intrauterine pregnancy; Live intra-abdominal pregnancy was present within the pelvis, ventral to the uterus and measuring 7.2 X 12cm.she underwent feticide via ultrasound-guided fetal intra-cardiac potassium chloride injection on the second day after presentation and methotrexate on day 3,5 & 7. Laprotomy found extensive vascularity and attachment of the gestational sac to the omentum, mesentery, loops of bowel & lateral pelvic wall. There was no attempt made to remove the gestational sac & placenta was left insitu due to risk of hemorrhage and etus removal was deferred to a later date. The patient came multiple times with abdominal pain and 2 months after the initial presentation, the gestational sac was removed with a left salpingoopherectomy. 2 years later, she had a 2nd ectopic, and 8 months after the 2nd ectopic, she presented yet again with abdominal pain, diagnosed to be a 3rd ectopic pregnancy.

DISCUSSION: To our knowledge, this is first report of an abdominal ectopic pregnancy with the blood supply from the sacral plexus. After eleven weeks from the feticide procedure and previous laparotomy, we expected sac to be reabsorbed but Products of Conception (POC) were not completely resorbed & another laparotomy was performed. 2nd ectopic in this patient was uneventful with medical management but for the 3rd, a laparotomy was done as POC was not reabsorbed and patient had recurrent abdominal pain.

CV64

Recurrent spontaneous coronary dissection in a post-partum young female patient- a case report

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INTRODUCTION: Spontaneous coronary artery dissection (SCAD) is relatively rare and unexplored type of coronary artery disease. It has been increasingly acknowledged to be an important cause of acute coronary syndrome (ACS) in women, especially in the peri-partum period. Although long-term survival after SCAD appears favorable, the rate of recurrence is high. Moreover, revascularization in patients with SCAD is technically challenging in part due to fragility of the vessel wall and associated with higher failure rates or complications. In percutaneous coronary intervention (PCI) for SCAD, instrumentation

(wiring, angioplasty, or stenting) can propagate dissection and occlude side branches. This case report describes recurrent SCAD in a post-partum young female with PCI in both events.

CASE REPORT: A 35-year-old female presented to the emergency department with complaints of sudden onset left sided chest pain, radiating to the left shoulder, accompanied by shortness of breath, diaphoresis, nausea and an episode of vomiting. She was at six days post-partum (assisted vaginal vacuum delivery) and breast feeding with no other obstetric complications. Her past medical and surgical history is significant for mild anemia (hemoglobin 10 to 11 g/dL), hypercholesterolemia, gestational diabetes, and breast enhancement surgery with no history of smoking, alcohol use, illicit drug use, or hypertension. An electrocardiogram showed ST-segment elevation in the anterior and lateral leads. She was diagnosed with acute ST-segment elevation myocardial infarction, and immediately taken to a cath lab. A 3.0 x 8 mm PROMUS stent was deployed across the ostium of D1 in the mid LAD, and a 3.5 x 28 mm PROMUS stent in the proximal LAD with TIMI 3 flow. Troponin I, creatine kinase, and creatine kinase-MB were elevated up to 27.84 ng/mL, 1185 IU/L, and 109.2 ng/mL, respectively, with the constant chest pain subsequently for the next three days. On the 2nd day, repeat coronary angiography showed that all the stents were patent. The patient's echocardiography consistently showed an ejection fraction (EF) between 35-40%, and was discharged on day 6 with a life vest. After the 1st visit, patient presented to the ED with chest pain multiple times. Coronary angiography on 3rd cath, showed extending dissection of the mid LAD and the mid D1 with TIMI 3 flow. A 2.25 x 12 mm TAXUS Liberte stent was deployed in the mid D1, and a 2.5 x 15 mm PROMUS stent in the mid LAD. The 5th repeat coronary angiography showed no coronary dissection. She was discharged home and was closely monitored as an outpatient. The wearable defibrillator was d/c on that visit as there was mild residual disease in LAD and normal EF of 50% without wall motion abnormalities.

DISCUSSION: SCAD is a cause of ACS with an estimated prevalence of 0.1% to 0.3% in angiographic series (6,7). Patients presenting with AMI who have symptoms of ongoing ischemia or hemodynamic compromise should be considered for revascularization with PCI or CABG. However, the poor results with revascularization have been reported. Conservative management for stable patients may be optimal. The ongoing SCAD studies will help help elucidate the long-term cardiovascular outcome of SCAD.

CV65

New T Wave Inversions: A case of apical HOCM masked by stress induced cardiomyopathy

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INTRODUCTION: Acute T wave inversions are typically a sign of warning. In the emergency setting they are seen either in acute coronary syndrome or as a sign of intracerebral hemorrhage. Apical hypertrophic cardiomyopathy (HCM) is a rare variant of hypertrophic cardiomyopathy(CMP) that usually involves the apex of the left ventricle.It is characterized by giant T wave inversions in the EKG. We present a case of a 48 year old male that developed stress induced cardiomyopathy masking typical electrocardiographic changes of apical HCM.

CASE REPORT: 48 year old male with past medical history significant of major depression was brought to the hospital after an alleged suicidal attempt. The patient was subsequently intubated for airway protection and transferred to the intensive care unit. Urine drug screen was negative. There was no family history of cardiomyopathy or sudden cardiac death.On initial evaluation blood pressure was 168/98 mmHg, a heart rate of 114 beats per minute, a temperature of 98.8 F, a respiratory rate of 27 breaths per minute and pulse oximetry of 97 %. Physical examination including cardiac exam was normal without any murmurs appreciated. Initial electrocardiogram showed sinus tachycardia with a rate of 111 beat per minute and no ST or T wave changes. One hour later and the following day subsequent EKGs revealed new deep 4mm T wave inversions diffusely in anterolateral leads. CT head was negative. Chest X-Ray was normal and troponins remained at 0.00. A transthoracic echocardiogram showed small to moderate anterior,anteroseptal ,anteroapical and apical myocardial infarction and an ejection fraction of 50-55%. The following day an echocardiogram with contrast showed no evidence of apical infarction or ballooning cardiomyopathy. Cardiac catheterization revealed normal coronaries with "Ace of Spades" sign. Two months after discharge, a baseline in EKG was performed in the ER for another unrelated visit which showed persistent T wave inversions.

DISCUSSION: Apical HCM is a rare variant of HCM only seen in 1-3% of Non-Asian population. It is characterized by giant T wave negativity usually >10mm deep in the EKG and a spade like configuration of the LV cavity. Upon literature review there has being only three cases reported of Apical HCM being masked by stress CMP. To our knowledge this is the first case of

stress induced CMP causing normalization of T wave changes in patient with baseline T wave inversions secondary to Apical HCM.

CV66

Reverse Takotsubo: A rare entity of stress cardiomyopathy

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INTRODUCTION: Stress cardiomyopathy also called Takotsubo cardiomyopathy is characterized by transient systolic dysfunction mimicking myocardial infarction in the absence of obstructive coronary artery disease. Several mechanisms have being postulated for its pathogenesis, being catecholamine mediated injury and vasospasm among the most common causes. Reverse Takotsubo is a rare variant of classic Takotsubo cardiomyopathy that usually presents within a different patient profile and with its own hemodynamic considerations. We present a case of a 67 year old female with Reverse Takotsubo mimicking ST segment elevation myocardial infarction.

CASE REPORT: We present a case of a 67 year old Hispanic postmenopausal female with no significant past medical history who presented to the emergency room with typical retrosternal chest pain , palpitations and gastrointestinal discomfort after drinking a glass of wine two hours prior to arrival. EKG showed 1-2 mm ST elevation in inferior leads, v5 and v6 which were more pronounced 24 hours after initial event with associated new T wave inversions in lateral leads. Her initial level of troponin was 5.25 and trended up to peak troponin of 11.47. She was started on acute coronary syndrome protocol and taken to cardiac catheterization. Left heart catheterization was free of significant disease with LV gram showing abnormal wall motion with an ejection fraction of 40% , dyskinesis of the entire basal to mid segments with compensatory hyperkinesis of the apex consistent of reverse Takotsubo cardiomyopathy. Echocardiogram showed mid and basal inferolateral wall hypokinesis with an ejection fraction of 45- 50% The patient was discharged on ACE inhibitors and beta blockers and was recommended take Escitalopram for anxiety. The patient was free of chest pain within the next day of hospitalization.

DISCUSSION: Reverse Takostubo is a rare variant of stress cardiomyopathy. Its recognition is important for prognostic, evaluation and treatment purposes. It is generally characterized by transient systolic dysfunction of the apical and/or mid segments of the left ventricle that mimics myocardial infarction, but in the absence of obstructive coronary artery disease. This is a very important entity as can be easily missed but fortunately has very good prognosis that can aid in expectations of recovery.

CV67

Fulminant necrotizing fasciitis and sepsis from *Aeromonas hydrophila* and *Aeromonas sobria* after traumatic injury

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INTRODUCTION: *Aeromonas hydrophila* and *Aeromonas sobria* are Gram-negative, motile, facultative anaerobic bacilli that morphologically resemble members of the Enterobacteriaceae. These organisms are typically found in water sources and can cause a range of infections from minor skin infections, gastroenteritis, and more unusually severe infections such as necrotizing fasciitis, septic shock, and pneumonia. *Aeromonas* infection with septic shock has a reported mortality of 40-80%. Necrotizing fasciitis with sepsis due to combined *Aeromonas hydrophila* and *Aeromonas sobria* in the setting of trauma has not been described.

CASE REPORT: 48 yo male pedestrian struck and dragged by a street sweeper dispensing non-potable water. He was intubated upon arrival for respiratory distress related to multiple bilateral rib fractures, bilateral pneumothoraces, left flail chest, left hemothorax. Additional injuries included multiple open left upper and lower extremity fractures with associated complex soft tissue injuries, and an open book pelvic fracture. Massive transfusion protocol was initiated in the trauma room. After IR embolization of the right hypogastric artery and external fracture fixation of the pelvis, the patient was admitted to the Trauma ICU (TICU). Empiric Cefazolin was initiated on hospital day (HD) #1 and was broadened to include Piperacillin/Tazobactam and Clindamycin on HD #2 and #3 respectively; due to onset of septic shock, and development of ARDS. On HD #4, expanding soft tissue necrosis of the extremity and concern for abdominal compartment syndrome prompted soft tissue debridement and decompressive laparotomy. Due to hemodynamic instability and severe hypoxemia, all surgical interventions were performed at the bedside. On HD #5 bedside left upper extremity amputation was required to control distal soft tissue necrosis. HD #5 was also significant for the initial culture identification of *Aeromonas hydrophila* infection. *Aeromonas hydrophila* and *Aeromonas sobria* were cultured from the LUE by HD #7. Despite aggressive daily inspection, pulse suction irrigation, and debridement of all open wounds, soft tissue necrotizing fasciitis continued to spread. On HD #20, left claviculectomy, partial

scapulectomy, and acromionectomy was performed in an attempt to control continued infectious spread. Additionally, daily application of Neutrophase ™ spray (hypochlorous acid 0.01%) and application of a continuous irrigation wound V.A.C. therapy to the chest and left lower extremity wounds was initiated. On HD #26, necrotizing infection spread to the closed laparotomy site, leading to additional debridement and V.A.C. therapy. TICU course was further complicated by rhabdomyolysis, lactic acidosis, and acute kidney injury necessitating daily hemodialysis, continued hypovolemic and cardiogenic shock. On HD #28, due to poor prognosis, comfort care was initiated. The patient expired shortly thereafter.

DISCUSSION: The pathogenesis of *Aeromonas* species is due to enzyme release that facilitates spread along fascial planes and stimulates a cytokine release cascade that can induce a SIRS response in the host. Early and aggressive debridement is critical because *Aeromonas* NF is usually fatal. Consistent with prior reported literature,our case demonstrated the initial traumatic injury with a non-potable water source likely contaminated with *Aeromonas* lead to progressive cellulitis, NF, septic shock and death.

CV68

Can REM without atonia (RWA) be present in pseudo-rem sleep behavior disorder (Pseudo-RBD) due to obstructive sleep apnea (OSA)?

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INTRODUCTION: ICSD-2 lists RWA as an essential criteria for diagnosing RBD but evidence regarding it's specificity is lacking. We describe a case of OSA-related pseudo-RBD who had finding of RWA on his split video polysomnography (VPSG), and RWA resolved with CPAP treatment of his OSA.

CASE REPORT: A 71 yo male with previously diagnosed severe OSA presented with relapse of snoring and hypersomnolence (Epworth Sleepiness Scale (ESS) score: severe, 20/24), since his CPAP machine broke down 6 months ago. He also noted fortnightly occurrence of vivid dreams, and dream-enactment behaviors since then. Once, in his dream about a fight, he lifted up one of the guys and then woke up with his arm lifted up. There was no history of seizures, somnambulism, mood disorder or intake of anti-depressant medications. Neurological examination was normal. Patient underwent a split VPSG that was scored by AASM criteria. Diagnostic part showed severe OSA with apnea+hypopnea index (AHI) of 78.9/hour. Intermittent behaviors were seen during supine REM sleep of rapid flexion/extension of lower extremities in a running motion, with yelling or moaning. Most of these were triggered by apneas. RWA was present. In the treatment part, the first REM cycle, on subtherapeutic CPAP pressure, showed persistence of RWA with intermittent behaviors of flexion/extension of ankles in a pedaling motion. Final REM cycle, on therapeutic CPAP pressure, showed resolution of hypopneas (AHI 7/hr), behaviors and RWA. He had no dream recall. He was re-started on CPAP therapy for severe OSA and his hypersomnolence has improved (ESS score: normal, 7/24). On follow up, patient reported having vivid dreams/behaviors only on the nights that he does not wear his CPAP machine.

DISCUSSION: RWA may be present in cases with pseudo- RBD. Hence RWA may not be specific for the diagnosis of true RBD. Further studies are needed.

CV69

Takotsobu Cardiomyopathy: A typical presentation, atypical diagnosis

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INTRODUCTION: Takotsubo cardiomyopathy (TCM) is a transient cardiac syndrome that mimics acute coronary syndrome. It was first described in Japan in 1990 by Sato et al. Patients often present with chest pain, have ST-segment elevation on electrocardiogram, and elevated cardiac enzyme levels consistent with a myocardial infarction. However, when the patient undergoes cardiac angiography, left ventricular apical ballooning is present and there is no significant coronary artery stenosis. Its pathophysiology is not completely understood. Studies postulate neuroendocrine derangements may play a role. Takotsobu cardiomyopathy has also been associated with other medical conditions, including reported cases of severe sepsis. Given these associations, TCM may be more common than once thought.

CASE REPORT: This is a case of a 78 year old female with a history of hypertension and scleroderma who presented to the emergency department for progressively worsening dyspnea for 6 days duration. She reports an episode of non-exertional chest pressure with radiating features to her neck and left arm with accompanying diaphoresis, onset after receiving distressing news of her granddaughter's death. The chest pressure was brief and self limited, without recurrence. The dyspnea persisted, progressively becoming more severe, and ultimately prompted presentation to the emergency department for evaluation 6 days later. Initial evaluation in the emergency department revealed an elderly female patient who was in obvious respiratory distress, tachypneic, tachycardic, and hypertense with pulse oximeter reading of 87%. She responded to noninvasive

positive pressure ventilation. Her lab workup was notable for BNP 900, Troponin 0.11 and a D-Dimer of 1813. An EKG was notable for contiguous T waves inversions in V4, V5, and V6. A bedside ultrasound was notable for prominent left ventricular dilatation in the classic "octopus pot" configuration of Takotsubo cardiomyopathy. Cardiac catheterization confirmed the sonographic impression of dilated cardiomyopathy of the Takotsubo type and no coronary artery disease. Standard supportive treatment was continued for congestive heart failure until the patient's clinical status improved. A follow up echocardiogram revealed improvement of left ventricular systolic function prior to the patient's discharge.

DISCUSSION: Takotsobu cardiomyopathy (TCM) mimics acute coronary syndrome. It classically involves left ventricular apical kinesis, and presents with elevated troponin enzymes and EKG changes similar to ACS. The prognosis in TCM is typically excellent, with nearly 95% of patients experiencing complete recovery in several weeks. This makes TCM an important consideration in all patients presenting to the emergency department for evaluation of chest pain.

CV70

When *Mycobacterium avium* complex and HIV breakup: A rare clinical scenario

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INTRODUCTION: *Mycobacterium Avium* Complex (MAC) is a non-tuberculous mycobacteria associated in most cases with disseminated disease in HIV-infected individuals. Rarely, It may cause isolated pulmonary infection in non HIV-infected individuals.

CASE REPORT: A 39-year-old chronic alcoholic male, originally from Mexico, was evaluated for withdrawal seizures. Review of systems revealed fever, dry cough, and 20 pound-weight loss in the last 6 months. Physical examination was significant for rectal temperature of 102° F, as well as minimal wheezing on auscultation of the right upper lung field. Heart and abdominal examinations were unremarkable. Chest radiography (CXR) showed apical pleural thickening and right upper lobe volume loss unchanged from an old imaging 3 years ago. Computed tomographic imaging of the chest revealed right upper lobe cavitation and bronchiectasis as well as nodular densities in upper part of both lungs. As a high suspicion of Mycobacterium tuberculosis (MTB) infection, HIV and Quantiferon TB Gold assay were negative; however, tuberculin skin test resulted in 12 mm induration. Multiple sputa for acid fast bacilli (AFB) were negative. A fiberoptic bronchoscopy revealed distorted right bronchial tree, and bronchial washings were positive for AFB. He was empirically started on multi-drug therapy for presumed M. tuberculosis infection. Surprisingly, AFB DNA probe from bronchial washings was negative for MTB, and positive for M. gordonae, as well as MAC. Clarithromycin was added to the drug regimen pending final identification, and in-vitro susceptibility studies. This has led to marked clinical as well as radiological improvement. He was eventually discharged on clarithromycin, ethambutol, and rifampin to complete at least 12 months with periodic clinical and radiographic monitoring.

DISCUSSION: Non-tuberculous mycobacterial infections are rarely seen in non-HIV-infected population, and are caused by MAC in 40% of cases. Risk factors include chronic lung disease, chronic alcoholism, and smoking. Diagnostic criteria for MAC pulmonary disease include radiographic evidence of cavitation, positive AFB culture results from at least two separate sputum samples, and exclusion of MTB. Unlike MTB, MAC is rarely transmitted from person to person, and treatment regimen is significantly different.

CV71

Atraumatic splenic rupture in a patient with chronic monomyelocytic leukemia

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INTRODUCTION: In comparison to traumatic splenic rupture, atraumatic splenic rupture (ASR) is the more rare entity but equally life threatening. Malignant hematological disorders with splenomegaly such as leukemias, lymphomas and infectious diseases are the most common causes of ASR. Although hemorrhagic complications are associated with thrombocytopenia in myelodysplastic syndromes, reports of ASR in patients with chronic myelomonocytic leukemia (CMML) still remains rare. We present a case of atraumatic splenic rupture in a patient with CMML. To our knowledge, there have been only 8 previously published cases of atraumatic splenic rupture in patients with CMML.

CASE REPORT: The patient was a 70 year-old male with past medical history of CMML with idiopathic thrombocytopenia status post chemotherapy 2 weeks prior and hypertension who presented with gradually worsening chest pain, left sided abdominal pain and shortness of breath for 4 days. His past surgical history was significant for abdominal aortic aneurysm repair and home medications included; decitabine, omeprazole, amylodipine, metoprolol, omega-3 fatty acids and calcium carbonate-vitamin D. The patient was a 0.75 pack/year smoker who quit approximately 14

years prior to this presentation, drank alcohol socially and denied illicit drug use. Vitals: Rectal Temp 101.3|| BP 140/79|| HR 127|| RR 20|| SpO2 96% RA Physical: Abdomen was soft with mild tenderness throughout and splenomegaly was appreciated. EKG: sinus tachycardia Labs: WBC 29, Hb 7.6 PLT 15. Approximately 30 minutes after presentation, the patient's mental status decreased, his breathing became agonal and he syncopized. Blood pressure at this time was 59/37 mmHg. He was subsequently intubated, then resuscitated with multiple liters of fluids, pure red blood cells, fresh frozen plasma and platelets. Central venous access was also placed at this time and the patient was started on pressors. Labs drawn before transfusion showed a decrease in Hb to 6.2 and a newly elevated lactate of 6.1. While the patient's fever and tachycardia was initially concerning for sepsis, the presence of splenomegaly and bedside ultrasound showing free fluid made splenic rupture a more concerning differential. The patient was sent to cat scan, which revealed splenomegaly, splenic rupture and hemoperitoneum. Surgery was consulted and the patient was taken to the operating room for emergent splenectomy.

DISCUSSION: Atraumatic splenic rupture should be a consideration in patients with hematological malignancies who present in extremis with abdominal pain. Ultimately, this can reduce time to CT to confirm diagnosis and allow for shorter time to definitive treatment of splenectomy if indicated.

CV72

Infant botulism presenting as near sudden infant death syndrome

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INTRODUCTION: Infant botulism (IB) occurs when *Clostridium botulinum* spores are ingested by the infant and germinate inside gastrointestinal tract and form botulinum neurotoxin which inhibits neuromuscular transmission. Infants with IB classically present with constipation, poor feeding, listlessness, poor head control, weakness and hypotonia. If left untreated, IB can lead to respiratory failure and death. Infant botulism therefore could be a serious risk factor for sudden infant death syndrome (SIDS).

CASE REPORT: A 3 month old male with no significant past medical history presented to the emergency department as a cardiac arrest from home. The patient's grandmother reported that the patient had been well until 4 days prior to this presentation when he began having decreased oral intake, decreased bowel movements and become increasingly sleepy. The infant was under the care of his grandmother as both parents were away. He was seen by his pediatrician 1 day prior to this presentation as symptoms were progressing and he was having only small amounts of loose stool. His pediatrician recommended changing feeds from formula to soy based and Pedialyte. The following day, while the grandmother was attempting to feed the infant, he became unresponsive. He was found pulseless and cyanotic by emergency medical services. Cardiopulmonary resuscitation was started and he was intubated and transported to the emergency department. After 3 doses of epinephrine, 700 mililiters of normal saline and 1 dose of bicarbonate the patient had return of spontaneous circulation. His initial pH was 6.7 and lactate was 3.8. There were no significant other lab findings. Head cat scan was significant for anoxic changes involving the supratentorial brain. The patient was subsequently transferred to the pediatric intensive care unit with no confirmed cause of arrest. On day 2, a second pediatric intensivist decided to treat for botulism after obtaining additional history from the grandmother who stated, "he was gurgling whenever I tried to feed him." His neurological exam consisted of brisk pupillary response to light and absent gag reflex. On day 3 of admission, the patient received human botulism antitoxin. Over the next 3 days, the patient continued to require mechanical ventilation and in addition, had progressively worsening neurological exams. Botulism was confirmed on day 6. The parents decided on terminal extubation on day 8.

DISCUSSION: In our case, the infant presented as a near SIDS. The majority of cases of IB occur between the ages of 3 weeks to 6 months resembling the age distribution seen commonly in SIDS cases. In addition, IB can present in a spectrum from failure to thrive to death without preceding signs/symptoms, closely resembling SIDS. Therefore practitioners should include IB in their differential when confronted with a near SIDS presentation in a child in the first year of life.

CV73

A unique mechanism and presentation for vertebral artery dissection

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INTRODUCTION: Vertebral artery dissections (VAD) are an often under looked etiology of head and neck pain in the Emergency Department (ED). They account for more than 20% of strokes in patients under 45 years old, and they represent a treatable cause of ischemic stroke. The hallmarks of VAD are neck pain and headache, with 72% and 69% of patients complaining of these symptoms, respectively. Yet our patient pre-

sented prominently with additional complaints less frequently associated with VAD. We present a case of a non-traumatic vertebral artery dissection in an otherwise relatively young and healthy patient.

CASE REPORT: A 51 year old female with a past medical history of hypothyroidism presented to the ED with a 6 day history of neck pain and 1 day of blurry vision. The patient described the pain as a constant throbbing that was progressively worsening and radiated to her right temple, and the night prior she began to experience blurry vision in her right eye. The patient went snowmobiling one day prior to the onset of symptoms, however she denied any trauma resulting from the activity. The patient presented hypertensive at 173/123, pulse 94, and afebrile. The patient displayed no focal neurologic deficits, as cranial nerves II-XII were grossly intact, muscle strength was scored 5/5 equal bilaterally, no sensory deficits, visual acuity was intact, and there were no visual field deficits. An MRI of the brain revealed no acute infarct, and an MRA of the neck showed an intramural dissection of the right vertebral artery at the level of C2 with antegrade flow and mild-moderate narrowing in the area of the dissection. The patient receive blood pressure control with hydralazine, and in consult with neurology, was started on an IV heparin infusion and admitted to a telemetry unit. The patient continued to be treated with anticoagulation, and was bridged to Coumadin. Throughout the patient's admission her neurologic exam remained unchanged and non-focal. On day 1 following the admission, the blurry vision resolved, but the headache persisted, requiring a regimen of IV dilaudid and oral topamax. By day 3 of the admission, the patient report slight improvement in her headache and neck pain. A repeat CT angiogram of the head and neck and MRI of the brain were obtained, which still showed no acute infarct and no interval worsening in dissection and stenosis. By the 6th day of the admission, the patient was therapeutic on the coumadin and her headache had significantly improved, albeit still present, and she was discharged home with close neurology follow up.

DISCUSSION: This case highlights the associated risk with even the most trivial of jerky head movements. Visual symptoms, while not the hallmark of VAD, must necessitate further clinical investigation. This underscores the need to maintain a high degree of clinical suspicion in a scenario in which one might have otherwise overlooked a potentially serious pathology.

CV74

Cronkhite-Canada Syndrome : A rare syndrome of diffuse GI polyposis with ectodermal changes

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INTRODUCTION: Cronkhite-Canada syndrome (CCS) is a rare non-inherited disease of unclear etiology, with only 450 cases reported worldwide. Diagnosis is based on clinical and endoscopic findings characterized by predominantly gastrointestinal hamartomatous polyposis sparing the esophagus and dermatologic findings including hyperpigmentation, alopecia, and onychodystrophy. Owing largely to its rarity and limited understanding of cause, there is no current treatment consensus. Current literature favors combined therapy with parenteral nutrition, antibiotics, and corticosteroids. Regardless of treatment,prognosis is poor with a 5-year mortality rate 55%, with risk of malignant tranformation and spontaneous regression in only 5-10% cases.

CASE REPORT: 75 year old Korean lady presented with one month of worsening abdominal pain, poor appetite, watery diarrhea, and weight loss. CT abdomen was unremarkable and upper GI endoscopy revealed gastritis, abnormal glandular gastric features but biopsy was negative for malignancy, and she was thus initiated on PPI. Within 1 month, she returned with hematochezia, underwent upper GI and capsule endoscopies with colonoscopy. Findings revealed diffusely thickened gastric wall with CMV like inclusions, small bowel punctate ulcerations and pancolitis with sparing of ileum. Infectious and malignancy work up remained negative. Since multiple biopsies revealed increased eosinophils, patient was started on oral prednisone. After brief initial improvement, she developed alopecia, hyperpigmentation, and onychodystrophy. The combination of these ectodermal changes, malabsorption, chronic diarrhea, and protein enteropathy led to the diagnosis of Cronkhite Canada Syndrome. Subsequently, treatment was started with 6-mercaptopurine, adalimumab & prednisone. Repeat colonoscopy with endoscopy at 4 months revealed new progressive diffuse polyposis concerning the stomach and entire colon.

DISCUSSION: CCS is a sporadic disease of unclear etiology with no familial predisposition, but may be autoimmune or infectious in origin. Hypogeusia is usually an initial symptom, followed by chronic diarrhea and ectodermal changes including alopecia, nail dystrophy, and skin pigmentation. Endoscopy is consistent with diffuse multiple "strawberry" polyps of the gastrointestinal tract, classically sparing the esophagus. Classical skin changes may help differentiate it from other polyposis syndromes.

CV75

Eptifibatide-induced acute thrombocytopenia

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INTRODUCTION: Glycoprotein IIb-IIIa inhibitors are used in cases of high-risk coronary intervention. Thrombocytopenia is a very rare complication of these agents, reported to occur in < 1% of cases, and is more common with eptifibatide. It is characterized by acute (within 24 hrs) severe drop of platelet count (usually < 20,000/ml), and can happen with or without previous exposure to same agent. It is a reversible reaction once offending agent has been discontinued. Steroids, immunoglobulins have not been shown to improve outcomes. Official guidelines are lacking, but based on similar rare cases, it is recommended to monitor platelet count within hours of starting those agents. We present a case of 73-year-old Asian male who developed severe acute thrombocytopenia within 2 hours of starting intravenous eptifibatides.

CASE REPORT: 73-year-old Asian male was evaluated in our emergency department for intermittent episodes of retrosternal chest pain and diaphoresis that started 12 hours prior to his presentation. He has past history of diabetes mellitus and coronary artery bypass grafting (CABG) 12 years ago for severe coronary artery disease. Physical examination on presentation showed blood pressure of 142/67 mmHg, pulse rate of 96 bpm, respiratory rate of 18 breath/min, and he was afebrile. Cardiac and pulmonary examination, EKG, and chest radiography (CXR) was unremarkable. Laboratory investigations showed hemoglobin of 12.7 gm/dl, white blood cell count of 9,000/ml, and platelet count of 240,000/ml. Troponin was elevated at 44 ng/ml. He was started on intravenous (IV) heparin infusion as well as aspirin, clopidogrel, beta blockers, and nitrates for management of non ST-segment elevation myocardial infarction (NSTEMI). Coronary angiography done after 12 hours showed critical stenosis of a saphenous venous graft (SVG) to right coronary artery (RCA) with moderate thrombus burden. IV bolus dose of eptifibatide was given followed by successful deployment of a drug-eluting stent in SVG to RCA. 2 hours after the procedure, he developed marked shivering and generalized body aches that were initially suspected to be a reaction to contrast dye. IV steroid was given, and repeat laboratory work was significant for acute severe thrombocytopenia with platelet count of 5,000/ml, that was confirmed by a repeat sample on heparin instead of EDTA. Peripheral smear was negative for platelet clumping or Schistocytes. Platelet transfusion and IV steroid therapy was initiated. Marked improvement in platelet count was noticed, reaching 120,000/ml after 8 hours. No signs of bleeding or hemodynamic instability were experienced, and the patient was discharged the next day with platelet count of 130,000/ml. Given the acute severe drop in platelet count without history of recent exposure to heparin within 100 days, heparin-induced thrombocytopenia (HIT) was very unlikely. We believe the main reason of his acute thrombocytopenia was administration of IV eptifibatide that improved significantly with supportive measures and IV steroids.

DISCUSSION: Glycoprotein IIb-IIIa inhibitors are used in some cases of high-risk coronary intervention. Thrombocytopenia is a very rare complication of these agents, reported to occur in < 1% of cases, and is more common with eptifibatide. It is characterized by acute (within 24 hrs) severe drop of platelet count (usually < 20,000/ml), and can happen with or without previous exposure to same agent. It is a reversible reaction once offending agent has been discontinued. Steroids, immunoglobulins have not bee

CV76

Case report: Ovarian torsion during first trimester pregnancy following ovarian hyperstimulation therapy

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INTRODUCTION: Abdominal pain in pregnancy has a variety of differential diagnoses, many which are life-threatening. Ovarian torsion may be easily missed as diagnosis and is challenging given the non-specific symptoms and the limitations of imaging during pregnancy. Early pregnancy and increasing use of ovarian hyperstimulation therapy predispose individuals to torsion.

CASE REPORT: 35-year-old G1P0 at 10 weeks gestation with IVF pregnancy presented to the emergency department with a 12 hour history of severe right lower quadrant abdominal pain initially located at the right. Pain was described as constant, non-radiating, severe, and intensified by movement. She had one episode of emesis over the past 24 hours (also with a history of morning sickness). The day prior to arrival she had a painful bowel movement small amount of blood surrounding her stool, which was followed by two episodes of nonbloody diarrhea. She denied fever, dysuria, vaginal discharge, vaginal bleeding, nausea, and upper abdominal pain. Past medical history included bilateral ovarian cysts, and noted that her pain was different and much more severe than her pain caused by her cysts. She had been using progesterone suppositories until the night prior to her arrival. This was her first in vitro pregnancy, with no reported com-

plications. A diagnostic laparoscopy was performed. The intraoperative findings included right-sided ovarian torsion, twisted 2.5 times around its pedicle with vascular congestion of the right adnexa. The vascular congestion was relieved with detorsion of the ovary. The patient was discharged from the hospital the following day.

DISCUSSION: The right ovary is affected 33% more often than the left. Risk factors include: pregnancy, ovulation induction, ovarian hyperstimulation syndrome, history of adnexal torsion, polycystic ovarian syndrome, and previous tubal ligation 12% - 25% of cases occur in pregnant women 11 fold increase of ovarian torsion in patients utilizing assisted reproductive technology, with 50% of cases in those with history of ovulation induction CT and MRI may be used in pregnancy to aid in the diagnosis.

CV77

A bewildering case of lewy body dementia in an African-American male

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INTRODUCTION: Dementia with lewy body (DLB) is the second most common type of dementia, only behind Alzheimer's dementia. Visual hallucination, especially early in the course of dementia is a key feature of DLB, distinguishing it from other forms of dementias. Although understanding of DLB is evolving, it is important to identify DLB patients accurately because they have specific symptoms, impairments and functional disabilities that differ from other common dementia syndromes.

CASE REPORT: A 66 yr old African-American male was brought to the emergency room by his fiancé for the evaluation of acute and new onset visual hallucinations. According to the patient, his hallucinations began one to two weeks prior to his admission. The patient described his hallucinations as well formed images of people and aliens, of seeing things move and colors changing. He denied any such episodes in the past. He had no previous psychiatric history. His fiancé also reported a sudden decline in patient's cognition that preceded the onset of hallucinations. On examination he was awake, alert and oriented to time, place and person. He had a flat affect and mask like face. He kept his eyes on the floor during the whole conversation and had bradykinesia. On one or two occasions, he was found staring into space. He walked with a slow and steady gait, with his back slightly bent. Rest of the neurological exam was normal. CT Headshowed no acute infarction or hemorrhage. His labs displayed no electrolyte abnormalities. MRI brain and electroencephalogram were normal. In lieu of patient's sudden onset of visual hallucinations preceded by cognitive decline, he was diagnosed with lewy body dementia. In addition, he also had features consistent with parkinsonism which added to the diagnostic accuracy.The morning of discharge from hospital, he claimed to be free of hallucinations, with improvement in his bradykinesia. His MMSE at the time of discharge was 29/30.

DISCUSSION: Lewy Body Dementia is a diagnosis of exclusion. Two of the three features need to be present: Fluctuation in cognitive function,well-formed recurrent visual hallucinations and spontaneous motor features of parkinsonism. These patients respond better to cholinesterase inhibitors and have severe reactions to neuroleptic medications.

CV78

Delayed presentation of foreign body ingestion and retropharyngeal abscess in a child: A case report

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INTRODUCTION: Foreign body ingestion resulting in retropharyngeal and mediastinal abscesses is a rare occurrence in older children. We report the case of a twelve year old girl with acute onset respiratory distress, cough, stridor and fever, initially thought to have croup.

CASE REPORT: The family of the patient, a 12 yo girl, described an episode six days prior in which the patient took a bite of a tuna salad sandwich, felt a pinch in her chest, and then began to cough. The pain lasted several minutes and was self-limited. Since that time, the patient had progressive difficulty swallowing, to the point where she could now only swallow liquids. With the concern now for a retropharyngeal abscess related to a foreign body ingestion, vancomycin and piperacillin/tazobactam were initiated and the patient was admitted to the pediatric intensive care unit. She was able to tolerate a CT scan of the chest and neck seven hours after presentation, which revealed a large fluid and air-filled lesion in the retropharyngeal space extending superior to the esophageal sphincter and to the posterior mediastinum with significant anterior tracheal deviation. The fluid collection in the mediastinum measured up to 16.3 cm in the craniocaudal dimension. There was also a 2.5 cm linear foreign body in the posterior mediastinum. Given the extent of abscess in the posterior mediastinum, it was decided that the abscess would be drained in the operating room through the chest, rather than through an incision in the neck. A right thoracoscopic drainage of

the posterior mediastinal abscess was performed with saline lavage, removal of a 2.5cm shard of glass, placement of a drainage tube into the abscess cavity, and insertion of a left nasoduodenal tube. After the procedure, family provided the additional history that the patient made her sandwich with canned tuna and mayonnaise from a broken glass mayonnaise jar. This episode was witnessed by the patient's mother. The patient was extubated two days later. She underwent an esophagram five days after the surgery, which showed a large, persistent leak, so she was continued on duodenal tube feedings. At nineteen days after the operation, she was discharged home on enteral feeds. Two months after discharge, the patient's nasoduodenal tube was removed and the retropharyngeal abscess reaccumulated. She was readmitted for external drainage of the abscess.

DISCUSSION: Retropharyngeal abscess formation following foreign body ingestion in childhood is very rare, and there is almost always a history given of a witnessed or possible foreign body ingestion. This case is unique in that neither the patient nor family gave a history of possible ingestion, and there was a delay in symptom onset of six days.

CV79

HIV nephropathy - case of HIV immune complex disease

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INTRODUCTION: Kidney disease in human immunodeficiency (HIV) patients is most commonly attributed to HIV associated nephropathy (HIVAN). Prevalence of kidney disease in HIV patients is 2.4 % to 12 %. Viral replication or immune responses to viral proteins are essential to trigger HIV immune complex disease. In addition to HIVAN, HIV immune complex disease (HIVICK) is being more recognized in HIV patients. Additionally, anti-retroviral therapy is not associated with improved renal outcomes in patients with HIVICK.

CASE REPORT: A 29 year-old African-American male with no past medical historypresented to the hospital with complaints of weakness, shortness of breath, cough and weight loss for months. The patient had an elevated creatinine of 4.2 and an X-ray showing diffuse pulmonary infiltrates. HIV testingwas positive; CD4 count of 28. PJP pneumonia was suspected, which was confirmedvia bronchoscopy.The patient had renal dysfunction; renal biopsy was performed diagnosing HIVICK. Patient was discharged on atovaquone for PJP pneumonia and instructed to follow-up. Outpatient labs revealeda creatinine of 1.37 and he was started on trimethoprime/sulfamethoxazole for PJPprophylaxis. The patient returned to HIV clinic 2 week later with complaints of worsening dyspnea, weakness and cough, and was re-admitted. Thecreatinine had increased to 7.17, and was found to be profoundly acidotic with bicarbonate of 11. Patient's chest x-ray indicated persistent PJP pneumonia. Patient's renal function showed no improvement;ashiley catheter was emergently placed and hemodialysis was started and continued long term.The hospitalization was complicated with spontaneous pneumothorax secondary to PJP. The patient developed severe anemia, with a positive stool occult. An endoscopy was done showing CMV esophagitis. The patient was eventually stabilized, and returned within the month with similar symptoms of shortness of breath and cough. On that admission, patient was found to have pulmonary aspergillosis. The patient was treated with appropriate anti-microbial therapy but continued to deteriorate and subsequently expired.

DISCUSSION: HIVICK is a term given to pathologic findings consistent with immune complex disease, characterized by classic finding of "ball in cup" basement membrane lesion on biopsy. HIVICK is commonly seen in African-Americans, associated with severe HIV and unlike HIVAN, less likely to progress to ESRD.

CV80

Acute Disseminated Encephalomyelitis: A case series

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INTRODUCTION: Acute disseminated encephalomyelitis, or ADEM is an infrequent cause of neurological illness in children that is often poorly recognized upon initial presentation. The disease frequently follows a viral illness and causes a brief but intense autoimmune attack on the brain and spinal cord, which damages the brain's myelin, resulting in a loss of neurological function. Prompt recognition of ADEM is important as timely diagnosis and treatment can reduce the extent of lasting sequelae from this disease. Diagnosis is made by identifying classic white matter changes on T2 weighted images of the brain and spinal cord from an MRI. Other signs and symptoms of the disease are based on the areas of the damage to the myelin in the brain and spinal cord.

CASE REPORT: Case 1. A 10 year old male presented in the fall with a gradual onset of ataxia, "clumsiness," and frequent falls that has lasted for 3 weeks prior to his arrival. The symptoms were preceded by a brief febrile illness. 3 days before his arrival, he had devel-

oped slurred speech and one day of weakness in his left arm. Neurological examination revealed weakness of the left upper and lower extremity along with diminished sensation to light touch. The rest of the physical examination was normal. The CSF showed no abnormalities. An MRI of the brain and spine revealed, multifocal abnormal enhancing lesions distributed throughout the brain parenchyma, intermedullary substance of the cervical and thoracic regions of the spinal cord along with cord edema and mild expansion. Perivascular demyelination is seen on brain biopsy, consistent with ADEM. The patient received a 5 -day course of high dose steroids with gradual improvement of the symptoms. Case 2. A 6 year old male presented during the winter with acute loss of vision in both eyes. One week prior to onset of the symptoms he had a viral illness. Initially he had changes in the in the color perception, followed by blurred vision and later on complete loss of vision. On exam he had dilated pupils that were minimally reactive to light with papilledema. Rest of the exam was normal except for ataxia. CSF showed pleocytosis. MRI of the brain and spine revealed increased signal intensity in the subcortical parts of supratentorial white matter, the optic nerves, and the cervical and thoracic spinal cord. The patient received high dose steroids for 5 days, with resolution of his symptoms. Repeat MRI of the brain was normal. Case 3. A 14 year old male presented during the spring with 2.5 weeks history of headache, 2 days history of difficulty walking and urinary retention and few hours of slurred speech. He had nausea, vomiting, photophobia, and neck stiffness with out fever. On exam the patient was found to have marked nuchal rigidity, decreased strength in the lower extremities, and normal in the upper extremities with ataxia. CSF showed pleocytosis with no growth in cultures. MRI brain and spine revealed T2 prolongation of the right side if the thalamus and the cervical spinal cord particularly at the C6-7 levels. Treatment with 5 days of high dose steroids resulted in recovery of neurological function.

DISCUSSION: Case series illustrates that ADEM has a widely variable presentation that is repeatedly confused with other neurological pathology. The majority of patients presented with brief viral illness followed by a motor abnormality involving cranial nerve or pyramidal tract. MRI with and with out contrast is the diagnostic choice.

CV81

Hemolysis and Pancytopenia: A case of vitamin B12 deficiency

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INTRODUCTION: The clinical presentation of B12 deficiency can be significantly varied, however usually involves symptomatic anemia with or without megaloblastosis, and neuropsychiatric symptoms ranging from paresthesia to dementia or even psychosis. While there are some descriptions of rare hematologic manifestations of B12 deficiency, almost all involve anti-intrinsic factor or anti-parietal cell antibodies. This clinical vignette presents a case of an adult male found to have isolated B12 deficiency presenting with pancytopenia and hemolytic anemia in the absence of the autoantibodies typically associated with pernicious anemia.

CASE REPORT: A 39-year-old male with no past medical history presented to the emergency department for a near-syncopal episode occurring two days prior. Over the past three days he experienced chills, subjective fevers, and myalgias. He reported generalized weakness and fatigue over the preceding six months. Vitals were remarkable for fever of 104F. There was conjunctival pallor; no hepatosplenomegaly. Chest x-ray and EKG were normal. Laboratory studies revealed WBC count 2.7 (k/uL), hemoglobin 8 (g/dL), MCV 116 (fL), RDW 17.2% He was admitted for symptomatic anemia. He also developed thrombocytopenia with a nadir of 57,000. Work-up revealed low Vitamin B12 level 42 (pg/mL), low iron level 8 (ug/dL) with accordant iron studies, and a normal folate level. Methylmalonic acid level was markedly elevated at 42300. LDH level was elevated (1867 u/L) and haptoglobin levels were undetectable (<15 mg/dL). Stool occult blood was negative. Viral serologies including HIV, Hepatitis A, B, and C, EBV, and Influenza A and B--aimed at investigating the pancytopenia, and fever--were negative. Thyroid studies were within normal limits. Blood and urine cultures were negative. ANA, anti-intrinsic factor and anti-parietal cell antibodies were negative. The pancytopenia resolved with daily B12 1mg intramuscular injections. Iron deficiency was addressed with IV replacement therapy. The patient's symptoms and pancytopenia improved in days, eventually resolving entirely. Hematologic counts and hemolysis parameters normalized, and the patient was discharged continuing B12 injections as outpatient without any further complications. It is believed defective hematopoiesis from severe B12 deficiency led to RBC destruction, turnover and eventual iron deficiency. Fevers were attributed to an unrelated viral syndrome.

Sensitivities for anti-intrinsic factor and anti-parietal cell antibodies are 50% and 85%, respectively, so it is still felt he had pernicious anemia despite negative antibody testing.

DISCUSSION: This patient presented with symptomatic pancytopenia with hemolysis due to vitamin B12 deficiency. A review of the current literature reveals a paucity of case reports involving pancytopenia, pseudo-thrombotic microangiopathy and hemolytic anemia, with almost all involving clearly positive autoantibodies. The case described here contributes to a growing body of observational evidence reminding clinicians that B12 deficiency may present with clinically severe hematologic manifestations.

CV82

Traumatic high flow priapism secondary to straight catheterization in a 2 year old and a literature review of high flow priapism in pediatrics

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INTRODUCTION: High flow priapism is a rare event in the pediatric population highly associated with pelvic floor trauma. Although causes differ greatly between adults and children, the priapism is still categorized into high flow and low flow varieties. Clinical features and either doppler ultrasound or cavernous blood gas continue to be central to diagnosis. Treatment plans for high flow variants rely on monitoring and non-invasive supportive care. We report a case of high flow priapism in a two year old secondary to straight catheterization that was successfully managed with conservative treatments. To our knowledge, this is the earliest case of high flow priapism described in the literature. We also review the literature on diagnosis and current standards of care for high flow priapism.

CASE REPORT: A two year old male presents with a chief complaint of urinary incontinence since discharge earlier that day from the ED. He was seen by the previous shift for a fever without a source lasting three days. Labwork and urinalysis showed no signs of infection and blood and urine cultures were sent. Nursing noted that a straight catheterization was performed without incident. After discharge, the mother noticed that he was not making wet diapers. Mother then notes that about ten hours after discharge that the child had developed a partial erection. He sometimes would grab his penis and state "pee pee hurt", but was otherwise acting normally. Patient had a low grade fever and stable hemodynamics. On physical exam, the child had a partial erection that was non-tender to palpation without any signs of ischemia. Patient was admitted to the PICU. Over night the priapism continued, and by the next morning, the priapism had resolved without further treatment. Urine output remained stable and patient was discharged without further incident.

DISCUSSION: Traumatic priapism is a rare diagnosis that may present at any time in the ED that is managed conservatively unless a low flow variety is suspected. Clinical suspicion, cavernosal blood gas testing, and Doppler ultrasound can rapidly and accurately triage the patient with priapism. Conservative therapies include pudendal artery compression and use of ice packs. Monitoring the patient and conservative therapies are reasonable as there is a low risk of long term sequelae in the acute period.

CV83

A case of metastatic pancreatic cancer with false positive β-hCG

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INTRODUCTION: Adenocarcinoma of the pancreas is the fifth leading cause of cancer in Western countries and an almost uniformly fatal disease. It has been noted that almost 40% of metastatic pancreatic exocrine tumors produce β-hCG and its production is correlated with an adverse effect on outcome. Human chorionic gonadotropin(hCG) is primarily produced by syncytiotrophoblasts of the placenta to maintain progesterone secretion. However, trophoblastic retrodifferentiation into an invasive and highly proliferative non-gestational neoplasm can also cause elevated hCG levels.

CASE REPORT: 45 year old African-American female presents from a correctional facility for evaluation of intractable abdominal pain. The patient also reported early satiety, nausea, poor appetite and unintentional weight loss. Her physical exam revealed a frail and cachectic female in moderate abdominal pain. Abdomen was diffusely tender with mild ascites, rest of exam was unremarkable. Her initial diagnostic workup began with an ultrasound of the abdomen which revealed multiple non-cystic lesions in her liver as well as mass at the tail of the pancreas. A follow up CT of the abdomen showed multiple hepatic metastases along with an ill-defined heterogeneous mass replacing the pancreatic tail, suspicious for neuroendocrine versus adenocarcinoma. A biopsy of one of the right hepatic lesions and subsequent immunohistochemical staining confirmed metastatic adenocarcinoma of pancreatic origin. Of note prior to her liver biopsy, a routine urine pregnancy screening was done which resulted positive. A confirmatory serum β-hCG also resulted positive. Quantitative β-hCG levels were in 70000 range. A careful and detailed history reveal pa-

tient has not engaged in any sexual activity during her incarceration at the prison facility for the past 3 years and was still getting her periods. A pelvic ultrasound subsequently ruled out intrauterine pregnancy. It was then determined the positive pregnancy test was a false positive due to her pancreatic cancer and there was no risk to administering narcotic pain medications or chemotherapeutic agents.

DISCUSSION: Little is reported on causes of elevated β-hCG levels except pregnancy. The anaplastic masses and high level of the serum β-hCG, implicates cancer as most likely source in this patient. This case should remind physicians to initiate appropriate workup for elevated serum β-hCG levels in non-pregnant patients.

CV84

Disentangling type 2 and latent autoimmune diabetes in adults

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INTRODUCTION: There are two broad categories of diabetes- type1 and type 2. With better understanding of the pathogenesis, there is increasing recognition of others types. Latent autoimmune diabetes of adults (LADA) is such a disease; patients with this disease commonly present in adulthood with type 2 phenotype and auto antibodies seen in type 1. The prevalence of LADA in western countries varies from 2.8 to 10% in patients with type 2 diabetes. More importantly obesity doesn't exclude LADA.

CASE REPORT: A 59 year old Hispanic male with history of diabetes mellitus for about 5 years was brought to emergency room with complaints of abdominal pain for 1 day. His labs were consistent with DKA for which he was started on intravenous insulin and fluids. On further questioning, it was found that the patient omitted the basal insulin the same day his symptoms started due to normal glucose values. A review of the medical records revealed that the patient was admitted multiple times over the past year with diabetic ketoacidosis. On the recent one however the patient suffered respiratory distress and was electively intubated. The patient's insulin and fluids were continued until his anion gap closed and he was transitioned to a basal/bolus insulin regimen. His respiratory status improved and he was weaned off the ventilator and extubated. There were no discernible precipitating factors for diabetic ketoacidosis. Since patient was diagnosed with diabetes when he approximately 54 years old, it was presumed that he had type 2 diabetes mellitus. However, because of the frequent admissions and rapid onset of DKA after missing basal insulin, LADA was suspected. His glutamic acid decarboxylase 65 (GAD-65) antibody level was positive, consistent with the disease. He was discharged on basal/bolus insulin regimen and extensively educated regarding the importance of being compliant with his insulin regimen.

DISCUSSION: We advise clinicians to look out for LADA by testing for GAD-65, since early commencement of insulin provides better glycemic control. Subjects affected by LADA are usually younger and leaner at onset, have higher HDL cholesterol, lower triglycerides and blood pressures when compared to patients with type 2 diabetes

CV85

Tuberculosis and pulmonary embolism - a unique entity

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INTRODUCTION: Pulmonary tuberculosis (TB) is prevalent worldwide specially in developing countries, but the occurrence of tuberculosis and pulmonary embolism is not commonly reported. Pulmonary embolism as a complication of pulmonary tuberculosis has received little emphasis in the literature. Studies have demonstrated a link between pulmonary tuberculosis and hypercoagulable state, with reported rates of 3-10% venous thromboembolism (VTE) in all adults with tuberculosis. We report a case that shows a link between these two entities and its clinical importance.

CASE REPORT: We describe the case of a 76 year old male with no risk factors for thromboembolism who presented to our hospital with chronic cough. Vitals were stable on admission and physical exam revealed bitemporal wasting and decreased breath sounds in left upper and middle lobe. The chest X- ray demonstrated a left upper lobe mass which prompted us to get a CT scan for better characterization of the mass. CT chest showed necrotic left upper and lower lobe lung masses along with findings of bilateral pulmonary emboli. Biopsy of the lung mass (left upper lobe) showed numerous acid fast bacilli in the background of necrotic tissue. A comprehensive clinical review and the lower extremity ultrasound showed no evidence of Deep Venous thrombosis. Patient also received extensive workup for hypercoagulable states which all came back negative. Treatment with Anti TB regimen and anticoagulation was started. Clinical course was unremarkable except that it was difficult to achieve therapeutic INR because of the interaction between Rifampin and Warfarin. Patient completed the course of anti tuberculosis therapy for 2 months and was later on discharged to followup with clinic. Patient was also given instructions to take warfarin

for a period of 3 months and then be reassessed.

DISCUSSION: VTE events may develop in patients with tuberculosis without any clinical risk factors. Therefore, thromboprophylaxis should be cautiously considered in this group of patients. High suspicion, adequate prophylaxis and prompt management of pulmonary embolism can play a vital role in the survival of this subset of patients.

CV86

Spontaneous rupture of urinary bladder in a young alcoholic male

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INTRODUCTION: Spontaneous rupture of the urinary bladder (SRUB) is a rare clinical condition, with a very high morbidity and mortality rates. Prompt diagnosis is often difficult both clinically and radiographically and necessitates a high index of suspicion as the patients present with nonspecific abdominal pain and may not offer a clear history. We report this young patient who presented with SRUB which occurred after alcohol intoxication and presented to us with a vague abdominal pain, anuria, and intraperitoneal fluid collection.

CASE REPORT: A 31-year-old male with a remote history of lumbar-spine surgery presented to ER with generalized abdominal pain. He had presented to the ER with a painful urinary retention four days prior to this visit and was diagnosed with prostatitis. He was subsequently catheterized and discharged on Finasteride and Bactrim at that time. In his current visit, he stated that he had not urinated since the prior discharge, and noticed significant abdominal distension. On straining, patient was able to pass drops of blood. He also had diffuse severe abdominal pain, with no alleviating or aggravating factors. Patient stated that he had consumed 12 beers prior to his arrival. Examination revealed a male in an acute distress. Vitals were noted to be temperature of 98.1 F, respiratory rate of 16 breath/min, heart rate of 99 beats/min, and a blood pressure of 142/87 mmHg. Abdomen was soft, diffusely tender, with sluggish bowel-sounds, and no rebound tenderness on palpation. Laboratory findings revealed BUN of 43 mg/dl and creatinine of 5.56 mg/dl (elevated from patients' baseline). The complete blood count showed WBCs of $15.7\times10^3/\mu$l with normal hemoglobin/hematocrit and platelets. The coagulation panel was also normal. In the ER, a Foley catheter was placed. A CT scan of the abdomen/pelvis, and in comparison to the prior done on the previous ER visit, showed a newly developed pneumoperitonuem. CT cystourethrography confirmed intraperitoneal bladder rupture. The patient was taken to the OR for an exploratory laparotomy and the bladder defect was closed with indwelling catheter left in place to ease healing. Following an uneventful postoperative course, he was discharged with a follow-up appointment in the urology clinic.

DISCUSSION: Spontaneous urinary-bladder rupture is a rare event. Excessive alcohol consumption causes diuresis, bladder over-distension and rupture. Initial presentation remains imprecise and continuous urinary leakage can lead to complications of abscesses, sepsis, and metabolic derangements. CT scan is the imaging modality of choice. The condition is a surgical emergency which necessitates laparotomy and closure of the breach.

CV87

A case of vancomycin induced neutropenia

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INTRODUCTION: Neutropenia is defined as having an absolute neutrophil count (ANC) of less than 1500/microL. Neutropenia may be congenital or acquired and it is most commonly acquired in adults. The pathophysiology is deemed to be either decreased granulocyte production or increased destruction. Numerous medications have been implicated including Vancomycin, Rituximab, Clozapine and Sulfasalazine.

CASE REPORT: A 32 year old Caucasian male with past medical history of Hypertension, ADHD, Hepatitis C, PTSD, and history of left deltoid abscess positive for Methicillin resistant *Staphylococcus aureus* (MRSA) presented to the hospital with right-sided shoulder pain, with suspicion for dislocation. Patient had previously undergone an incision and drainage of the abscess and the plan was to continue Vancomycin for duration of six weeks. On admission, he was on day twenty-three of treatment. His vital signs were stable. On physical exam, the patient was in no acute distress and the general physical exam was unremarkable. Skin examination revealed surgical incision with staples intact on the anterior surface of the left shoulder. There was no swelling, drainage or erythema present. Musculoskeletal exam showing decreased range of motion of both shoulders and loss of normal rounded appearance of the right shoulder. Metabolic panel was normal. Complete blood count demonstrated a leukocyte count of 2100/ml, with ANC of 504/ml. Patient's baseline WBC count was approximately 5500/ml. CAT scan of the right shoulder was performed and did not show any abnormalities. Patient was placed on neutropenic precautions and the patients' Vancomycin was immediately discontinued and changed to

Daptomycin. He received total of two doses of TBO-Filgrastim. Leucocyte count dramatically improved from 1700/ml to 6500/ml. Patient remained afebrile throughout the hospital stay and was then discharged on Daptomycin for a total of 6 weeks.

DISCUSSION: Vancomycin induced neutropenia is related to the duration of therapy rather than the dose. Neutropenia has been reported at a rate of 2%-8%. The nadir of the neutrophil count is observed 15-40 days after the initiation of Vancomycin. The median time to resolution of neutropenia is 10 days. Weekly CBC's are recommended for patients on long-term vancomycin infusion.

CV88

A fall leading to liver abscesses

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INTRODUCTION: Liver abscess are the most common type of visceral abscesses, half of which are pyogenic. Pyogenic liver abscesses may be secondary to hematogenous spread, portal vein pyemia or biliary disease. Clinical manifestations include fever, chills, anorexia, nausea, weight loss and malaise. Diagnosis is made by history, clinical exam. Radiological imaging, CT scan or Ultrasound, may be used in diagnosis.

CASE REPORT: A 45 year old Pakistani male, with no past medical history, presented to the ER with a 3 week history of fevers and chills. Patient stated he had poor appetite and lost 15 pounds in the last 3 weeks. He had on and off fevers associated with diaphoresis. He moved to USA 10 years ago, last visited Pakistan 1 year ago. The patient denied any sick contact, tick bites, nausea, vomiting, and diarrhea. He stated he had a dry cough but it was chronic; the patient attributed it to his history of smoking. He denied any dysuria or abdominal pain. He had a history of fall, one month back, while painting a house. The patient fractured his left wrist and eventually underwent open reduction and internal fixation. His vital signs on presentation were Blood pressure 79/40, Heart rate 80, Temperature 103.1F, Respiratory rate 12. Physical exam was normal except musculoskeletal exam showed limitation of range of motion of left wrist, with no erythema or tenderness at the site. His laboratory tests showed an elevated WBC count of 22,000/ml with 68% neutrophils. Hemoglobin was 11 g/dl, Hematocrit 34%, platelet count was normal and basic metabolic panel did not show any significant findings. He was admitted to ICU, started on aggressive intravenous hydration and broad spectrum antibiotics. Pan-cultures and stool studies were ordered prior to antibiotic administration. A CT scan of the abdomen revealed a 10x9.6 cm bi-lobed abscess in the right lobe of the liver. A catheter for drainage of the abscess was inserted. Appropriate studies of aspirated fluid were sent. All cultures were negative, serology negative for tick borne diseases. Peripheral smear was negative for any parasitic infection. Patient medical condition improved significantly with therapy. Antibiotics were changed to Ciprofloxacin and Metronidazole. The catheter was kept in place until drainage ceased.The patient was then discharged in stable condition

DISCUSSION: Given the lack of any other pathology, it was determined that the patient developed a liver hematoma which was then superinfected. Symptoms of a liver abscess may be vague and a high degree of suspicion is required for early and appropriate diagnosis. Mortality may be as high as 2-12%

CV89

Rhodococcus equi: From horse to man

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INTRODUCTION: *Rhodococcus Equi* is a gram positive pleomorphic organism which commonly contaminates the soil and gut of herbivores, especially horses and foals. Most human infections are associated with immune dysfunction, such as AIDS, lympho-proliferative malignancies. The infection can be acquired by inhalation, ingestion or super-infection or inoculation of wound. The organism persists within and destroys macrophages, resulting in necrotizing granulomatous reaction. Common sites of infection include lungs, blood, CNS and skin.

CASE REPORT: A 47 year old Hispanic man, nonsmoker with a history of HIV infection, was admitted with a 3-month history of cough productive of yellowish sputum, associated with dyspnea, fever. The patient also complained of right sided chest pain, aggravated by coughing and breathing. He denied night sweating, weight loss, hemoptysis, or sick contact. He denied alcohol and illicit drug abuse, recently moved from Puerto Rico to USA, where he was treated for pneumonia 6 months ago. His physical examination showed a well-developed man with no acute distress. His vital signs were heart rate 104 beats per minute, blood pressure 145/91 mmHg, respiratory rate 18 breaths/min, oxygen saturation 91% on room air and body temperature 102°F. He had a weak cough, and auscultation of the chest revealed reduced breath sounds in right lung base with right basal crackles. There was no clubbing. His cardiac examination revealed tachycardia but no murmurs. Laboratory studies showed no leukocytosis and low hemoglobin, and albumin levels. Urinalysis was unremarkable. Chest radiography showed a 4.5 cm rounded mass like opacity in the

right hilar area. Therefore a CT scan of the chest was obtained which revealed a cavitating mass like consolidation with small right pleural effusion. Sputum gram stain, and culture and sputum AFB, and quantiferon gold test were negative. Lung biopsy revealed severe acute necrotizing pneumonia with adjacent pulmonary fibrosis and numerous gram positive bacteria. Lung biopsy culture reported *Rhodococcus equi*. The patient was initially on broad spectrum antibiotics, which were then tailored to treat *Rhodococcus*. He received dual antibiotic coverage and his condition improved significantly while in hospital. He was safely discharged on Levofloxacin and Azithromycin. The patient was to follow up with infectious diseases specialist as outpatient.

DISCUSSION: *Rhodococcus equi* is an opportunistic pathogen, mostly leads to infections in the immunocompromised. However, may affect immunocompetent patients as well. Symptoms are based on the site of infection. Diagnosis is based on imaging and microbiology. A high degree of suspicion is required for diagnosis. Treatment for immunocompromised individuals involves dual antimicrobial therapy. Therapy is often prolonged and patients often require secondary prophylaxis to prevent recurrence.

Health Sciences Research

HSR01

Co-speech gestures and vocabulary enrichment in toddlers

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INTRODUCTION: Young children use SHAPE as a reliable indicator of object category membership when learning words whereas children at the negative end of the vocabulary development curve do not. This experiment tested the hypothesis that co-speech shape gestures boosts object learning over typical treatment scaffolds, for those latter children. It extends the experimental research by Capone Singleton and colleagues that shows shape gestures are particularly useful cues over no gestures, point gestures and other indicator gestures in boosting word learning (e.g., Capone Singleton, 2012; Capone Singleton & Saks, 2015). In previous research with average word learners children learn trained words and extend words to untrained exemplar objects when words are taught with shape gestures.

METHODS: Toddlers participated in a single-subject alternating treatment design that compared co-speech shape gestures treatment with a speech-only treatment. Parents complete a history questionnaire, and the MacArthur-Bates Communicative Developmental Index - Words and Sentences (MCDI), which is a survey of expressive vocabulary. The researchers identify ten unknown object words from the MCDI to serve as the taught stimuli (5 = co-speech shape treatment; 5 = speech only treatment). Teaching procedures are play-based with one object per word stimuli. Children hear the taught word 5x/session. Treatment presentation is alternated across sessions. Dependent variables: naming (taught, untaught generalization exemplars-2/stimuli), and identification (taught). There are 8 sessions in total.

RESULTS: Participants learned 1 - 3 words (of 5 per condition) in the co-speech shape condition, and generalized to exemplars of learned words in the co-speech shape condition. Interestingly, these participants who are at the negative end of the vocabulary curve are also mapping sounds and syllables, and making links to referents in some instances. Co-speech shape gestures appear to be boosting the processing of partial mappings. Comparing partial mapping results between conditions will allow us to hypothesize areas of weakness in children with poor learning profiles. Other controls in place: known objects were named regularly; unknown objects never modeled were not learned.

CONCLUSION: Consistent with the extant literature co-speech shape gestures boost word learning. (Capone & McGregor 2005; Capone Singleton 2012; Capone Singleton & Saks 2015). Children learned not only taught words but extended words to untrained exemplars. In some instances toddlers first mapped on sounds or syllables as a rough draft of the trained word but made links to the referent. In previous work with average- and high-tail vocabulary learners, co-speech shape gestures led to more phonemes being mapped over word models only treatments. This study is extending previous experiments forward by including toddlers at the negative end of the word learning curve, and in using real words that are typically found in toddlers' vocabularies from the MCDI.

HSR02

The impact of family history of cardiovascular disease on changing lifestyle habits

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INTRODUCTION: Cardiovascular disease was estimated to cost 17% of national health expenditures in 2011; in 2030, this cost may rise to $818 billion and cardiovascular disease is projected to affect 40% of Americans. An individual's cardiac health can be affected by a family history of cardiac disease; a person with a first degree relative who experienced a myocardial infarction at a premature age is at greater risk to experience cardiac events himself. In addition, a person with a first degree relative who adopts unhealthy lifestyle practices is more likely to adopt these practices as well. The goal of this study is to investigate the cardioprotective lifestyle habits of individuals with a family history of cardiovascular disease and their motivations for adopting these particular lifestyle choices.

METHODS: This study is a non-experimental, quantitative analysis regarding the effect of a family history of cardiovascular disease on individuals' lifestyle choices. A survey created by the aforementioned authors included 15 multiple choice questions that asked about family history of cardiovascular disease. A convenience sample of volunteer undergraduate and graduate students along with faculty and staff were used for the study. The volunteers were recruited in the university's cafeteria over the course of several afternoons. Analysis was then performed via SPSS 18.0 using Chi-Square analyses and Pearson Correlation tests with p-values less than 0.05).

RESULTS: A total of 287 surveys were completed by students and faculty, with an average age of 20 years and a nearly even split of males and females participating. Of the participants with a family history of cardiovascular disease, only 9 participants, or 3%, reported to be current smokers. However, of the 278 participants with a family history of CV disease who do not smoke, only 41.5% report that this decision is due to health/family history. Similarly, of the participants with a family history of CV disease who report to exercise regularly, 47.9% of these subjects admit to exercising for health reasons. Participants who make the conscious effort NOT to eat fast food, do so mainly for personal or social reasons, while only 23% of participants avoid fast food because of their health / family history of CV disease. Participants who avoid caffeinated drinks and soda report health / family history as their reason for avoidance in only 26.8% and 39.4% of participants, respectively.

CONCLUSION: While most of our participants did engage in healthy lifestyle habits, most of our participants had reasons besides health and family history that caused them to partake in healthy habits. Therefore, healthcare providers should provide more education to patients regarding the detrimental impact that a family history of cardiovascular disease can have on a person's cardiac health so that patients are more aware of how important it is to avoid smoking, exercise regularly, and eat nutritiously on a long-term basis to avoid cardiac events secondary to modifiable risk factors.

HSR03

Stroke awareness in the young adult population

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INTRODUCTION: Strokes are the fourth leading cause of death and the leading cause of serious long-term disability in the United States. If signs and symptoms go unrecognized due to lack of awareness, morbidity and mortality rates increase significantly. This is a major concern especially for the younger adult populations that may be at high-risk for stroke in the future. This high-risk category includes African-Americans and Hispanics due to the increased incidence of diabetes, hypertension, obesity, and hyperlipidemia in these populations. The purpose of this study is to gather data from Seton Hall students, aged 18-55 years, to determine the adequacy of their knowledge of stroke with respect to etiology, risk factors, symptomatology, and prevention.

METHODS: The design implemented in this experiment is a cross-sectional survey using a dichotomous questionnaire format. Undergraduate and graduate students from Seton Hall University, aged 18-55 and excluding those enrolled in the School of Health and Medical Sciences, are the subjects. They were asked to voluntarily complete a questionnaire that has various questions regarding stroke as well as demographical information. In order for the results to be significant (alpha: 0.05) with an effect size of 0.4, at least 82 subjects were needed. Based on the questions that are most frequently answered incorrectly, a Chi-Square Test of Independence was used to determine whether stroke knowledge is independent of ethnicity.

RESULTS: Of the 90 undergraduate and graduate students that completed the questionnaire, all met the inclusion criteria. 49 participants were female (54.4%) and 41 were male (45.6%) with the average age of 18 years. Only 14 participants (15.6%) responded "Yes" when asked whether he/she knew what a transient ischemic attack (TIA) was. 73% of the questions evaluating stroke knowledge were answered correctly. Hispanic participants (13.3%) received an average score of 74.4%, while African-American participants (20%) received an average score of 68.4%. The questions that were most frequently answered incorrectly pertained to which organ is affected during a stroke, symptom presentation, and the use of Aspirin as prophylactic therapy. Young adults were found to have minimal understanding of stroke knowledge ($p > 0.05$).

CONCLUSION: Results suggest that college students have suboptimal knowledge on how strokes are caused, presented, and avoided. Such results indicate that this population, especially those of African-American or Hispanic background, would benefit from educational interventions designed to teach the young adult how to both prevent and recognize a stroke. Although the results of this study cannot be generalized to the entire college population as a whole, the results demonstrate that there is a need for further research within this at-risk group. The increase in knowledge and awareness within this population could reduce the prevalence rate and, therefore, potentially decrease the number of negative outcomes, recurrences, and even mortalities in these young adults.

HSR04

Influence of FDA warnings on tanning decisions

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INTRODUCTION: According to many modern day ideals, men and women with a tan or "healthy glow" tend to be perceived as more attractive than those without. Over the recent years the incidence of using an

indoor tanning bed has risen. In response to this, the FDA has increased warnings trying to counteract this trend due to the rise in melanoma. The purpose of the study was to determine the effectiveness of the FDA Warnings of the prevention of indoor tanning in both males and females. The object was to determine if the known side effects of tanning beds are enough to prevent consumers from using them and whether or not consumers are taking the proper precautions. In spite of the new regulations, it was hypothesized that the current FDA warnings are not effective in preventing indoor tanning consumer use.

METHODS: A table was set up outside the dining hall at the University Center the first week of the Fall 2015 semester and students and faculty were solicited at random and asked to voluntarily participate in a short survey about tanning. When they approached the table a script was read to them to inform the subjects of what the survey was. Subjects were not required to give their names or other personally identifying information. This survey was administered as a paper copy to the participants by one of the research group members and collected by another member of the research group. The surveys were then placed in a locked box and brought to the Principle Investigators home where it remained until it was analyzed. Descriptive statistics and frequency counts were then determined using SPSS.

RESULTS: In total we had 149 participants respond to our survey, with 103 females and 46 males. 79.8% of people who responded were between the ages of 18 and 20 because the survey was distributed on a college campus. 48.9% of the female participants and 91.3% of the male participants admit to never previously indoor tanning. Overall, 94.6% of participants were aware of adverse affects of UV radiation on skin. 96.8% of people who admitted to tanning were also aware of the FDA warnings placed indoor tanning products. However, only 59.3% of males and females who tan admit that the FDA warnings placed on indoor tanning have altered their behavior. Males were more likely to use sunscreen prior to tanning with 50% of males who tan answering "yes", while only 32.1% of females admit to sunscreen prior to tanning activity. Our results also demonstrated that 43.6% identified as either fair or beige skin tone. Furthermore, 28% fair skinned and 40% of beige skinned individuals admitted to tanning weekly. After analyzing our data, it is likely that some of those who responded to the survey misunderstood some of the questions, which may have caused a discrepancy in some of the results.

CONCLUSION: In conclusion, it can be determined that the FDA warnings are effective in preventing indoor tanning consumer risk. The majority of participants do not go indoor tanning, and those who do are at least aware of the current FDA warnings placed on indoor tanning products. Further, although women are the primary consumers of indoor tanning products, based on the results, it is apparent that they are equally aware of the risks as men. Therefore, it can be concluded that the current FDA warnings are sufficient, and do not need to be altered at this time.

HSR05

The effect of duration of dynamic warmup on strength measures during internal and external rotation

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INTRODUCTION: In sports, strength in the shoulder, specifically the rotator cuff muscles, is important for overhead throwing athletes. Overhead athletes put repetitive force on the rotator cuff muscles, and it is important to maximize the strength output of the shoulder prior to performance. The objective of this study was to determine if a Body Blade shoulder workout had an effect on internal and external rotation strength.

METHODS: Repeated measures design in a controlled athletic training lab. Five males, five females; mean age 22.0 yo ±1.49; mean BMI 23.98(±3.68). IV Body Blade workout, levels of ten or thirty seconds, or no workout. The BB exercises were performed in three specific positions for the amount of time of that trial. BB was oscillated at 120 bpm. The main outcome measures for this study were internal and external rotation peak torque (ft-lbs), time to peak torque (ms), angle of peak torque (degrees), and mean peak torque (ft-lbs), as measured on a Biodex System 3. Subjects' arm position was set up at 90 degrees shoulder abduction and 90 degrees elbow flexion on the Biodex System 3. Statistical analysis was a repeated measures ANOVA ($p<0.05$). SPSS V22 was used for all analyses.

RESULTS: No significant differences were found in the change scores between the three levels of the intervention. However, trend analysis revealed that external rotation maximum peak torque generally decreased at ten seconds of the intervention, and increased with no intervention. External rotation time to peak torque generally increased with no intervention, while external rotation angle of peak torque decreased with no intervention. External rotation mean peak torque generally decreased at ten seconds of the intervention. Internal rotation mean peak torque generally increased at ten seconds. Internal rotation time to peak torque also generally increased at ten seconds.

CONCLUSION: Although no significant differences were found in the change scores between the levels of the intervention, trend analysis revealed that further study with a larger subject population may result in significant findings. The manufacturer states that each position should be performed for 60 seconds, however current research indicates that the muscles fatigue at 15 seconds. Our trend analysis warrants further study, due to our finding of an increase of internal rotation mean peak torque and time to peak torque.

HSR06

The effect of lacrosse protective equipment and different airway management devices on the ability to provide CPR on a manikin

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Seton Hall University - Health Sciences Graduate Program

INTRODUCTION: During acute cardiac emergencies, it is imperative to have expedient access to the patient's airway and chest for performing CPR. Protective equipment worn by lacrosse athletes may present challenges for providing care. Objective: To determine if equipment condition (no equipment [NE]; equipment - shoulder pads and helmet with facemask removed [EQ]) would inhibit CPR performance (chest compressions and ventilations). Additionally, we wanted to determine the effects of four different airway management devices (bag valve mask [BVM], oral pharyngeal [OPA], nasal pharyngeal [NPA], King Airway [KA]) on rescue breath performance.

METHODS: The SimMan 3G manikin (Laerdal Medical Corporation, Wappingers Falls, NY) was used for all trials. The manikin was fitted with Core (Brine Inc, Milford, MA) lacrosse shoulder pads and a Warrior Renegade (Warrior Sports, Holingsworth, MI) helmet with the facemask removed for all EQ trials. Participants completed a total of 10 trials (8 in the role of ventilating the patient [two equipment conditions x four airway management devices], 2 in the role of performing chest compressions [NE vs EQ]). Three cycles of CPR were performed during each trial.The dependent variables were ventilation volume (mL), rate (#/min) of ventilations, depth (mm) of compressions, and rate (#/min) of compressions. Separate 2 x 4 ANOVAs were used to evaluate the main and interactive effects.

RESULTS: We found a significant main effect for equipment condition (p=0.01) and a significant main effect for airway management device (p=0.001) for the ventilation volume, but no interaction, and no significant effects for ventilation rate. All airway devices except KA (720.00±44.72 mL) failed to meet the 400 mL threshold recommended by American Heart Association in EQ conditions. All airway devices reached the 400mL threshold in NE conditions, with KA being greatest (740.00±22.36 mL). There was no significant difference for compression rate (p=0.79, NE [115.60±10.95/min] vs E [116.40±14.57/min]) or compression depth (p=0.23, NE [42.80±8.29 mm] vs E [41.80±9.04 mm]).

CONCLUSION: Lacrosse shoulder pads did not affect chest compression depth and may not need to be removed for CPR compressions. The KA produced the highest ventilation volume in both the NE and EQ conditions, and may be the suggested airway management device for an athlete with a helmet in place and facemask removed, since it does not require the seal of the pocket mask.

HSR07

Intermediate grade children's knowledge about the writing process: A qualitative survey

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INTRODUCTION: The purpose of this study was to better understand what intermediate grade children think about writing and the writing process. This is important because it enables us to draw conclusions on how children approach the writing process and the knowledge they have about writing process related tasks.

METHODS: One hundred fifty sixth grade children responded to 5 open-ended survey questions about the writing process. Questions about idea generation, planning, transcribing, and revising were included. A numeric coding system was developed to categorize responses.

RESULTS: Results indicate that most children viewed planning as a prewriting task and could describe advanced planning strategies such as graphic organizers. The majority of children surveyed describe their revising process as rereading and editing writing for accuracy and mechanics.

CONCLUSION: Findings indicate that intermediate grade children think of writing in a linear manner, possibly as a result of learning writing processes in a linear manner, rather than attempting this process in a recursive approach. Findings also indicate that intermediate grade children demonstrated knowledge about advanced planning strategies and view planning as an idea generation task consistent with theoretical models of writing. Most intermediate grade children viewed revising as an important task, but focused solely on rereading and editing for superficial features such as grammar, spelling, and punctuation rather than modifying, generating, or reorganizing new ideas. Clinical implications for working with children on writing process will be provided.

HSR08

Biting and chewing development in typically developing children

Lombardo, C.R. (student); Capone Singleton, N.C.; Davis, S.R.; Grandal, L.A.; Wang, G.H.; Whitney, S.M.; Zelenky, A.S. Seton Hall University - Health Sciences Graduate Program

INTRODUCTION: The purpose of this study is to show how (1) biting, (2) chewing, and (3) other variables related to advancing textures, change in typically developing children from ages 8- to 31-months. Currently there are no developmental norms for these behaviors as children advance textures. Speech-language pathologists have been using Morris and Klein (2000) as the gold-standard assessment tool. However, the Morris and Klein (2000) checklist of milestones is based on 4 children, and these data have not gone through the rigor of scientific peer-review. There is a clinical need for normative data on learning to bite and chew (Field, Farland and Williams, 2003). The current study presents data collected on biting, chewing and other variables related to texture advancement.

METHODS: This is a cross-sectional study of children ages 8-to 31-months. Caregivers (1) completed a history questionnaire, (2) video recorded a child's meal at home, and (3) photographed the plate of foods. Instructions for video recordings were provided to ensure the child's mouth and chin were visible for coding purposes. Dependent variables (DVs) and operational definitions were developed by the lab staff based on evidence-based practice and pilot testing. DVs: feeder type, percent accept, reason for refusal, bite-off position and grading, chew trajectory, mouth clean, expel, cough, gag, duration to chew, and duration between bites. Food textures were also categorized. Inter-rater coding was conducted by two researchers for jaw trajectory and other variables separately.

RESULTS: Self-feeding increased after 11-months with parents trying to feed children at the meal's end; Acceptance of NSF presentations declined with age. Refusal was largely due to satiation. Most children were presented chopped textures by 12-months which limited bite-off observations. However, hold and break-off patterns more often at younger ages, and sustained bite at older ages. Vertical was the most common chew trajectory with few observations of rotary even at the oldest age ranges, and mostly with the hardest texture. By 12 month, and 16 months on soft- and medium texture, respectively, children showed a vertical chew on 80% of trials. Only vertical chew (intermittently diagonal) met the 80% criterion. Children did not swallow completely before taking another bite of food (mouth clean <80%) at all ages. However, this did not affect safety of eating (cough, gag and choke < 10% at all ages). Low levels of disruptive behaviors were < 10%. Inter-rater reliability varied across behaviors with coders reaching > 80% for acceptance, rotary chew trajectory, bolus duration, and greater than 70% for other chew trajectories which is consistent with this literature-base.

CONCLUSION: This study tracked oral-motor and other behaviors relevant to advancing texture in typically-developing children. Morris and Klein (2000) served as the framework for these observations as this manual is the best-practice for children who fail to advance texture. The study provides initial data that some behaviors show more promise than others in differentiating developmental patterns. For example, rotary chewing does not appear to be as sensitive a development measure as vertical chewing in an age-range when most children are coming to clinics with complaints of failing to thrive due to texture advancement issues (Field et al., 2003). Of particular interest to the lab is to create opportunities to observe biting-off development as this is one foundation skill in chewing.

HSR09

The influence of cab design on segmental body postures and ergonomic risk for development of work related musculoskeletal disorders in forklift operators

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INTRODUCTION: Industrial truck drivers, including forklift operators, are at increased risk and severity of WMSDs missing, on average, three work days more per year than the average worker. (United States Bureau of Labor Statistics 2014). A recent study determined that forklift operators are at medium risk of developing WMSDs and that cab design is associated with differences in overall risk. The purpose of this study was to investigate why forklift operators using the dock stance (DS) cab design produced higher risk scores on the Rapid Entire Body Assessment (REBA) tool than operators using the universal stance (US).

METHODS: This was a retrospective study performed on a set of previously collected ergonomic data. The data consisted of 39 REBA scoresheets that were previously completed by a Certified Associate Ergonomist (CAE) during an analysis of images of 39 forklift operators. Final REBA scores and component scores for body segment domains of neck, trunk, upper arm, lower arm and wrist, were imported into Excel. Measures of central tendency were calculated for the total sample then stratified into two groups based on the cab design/stance used by the operator;

DS (nA = 24), and US (nB = 15). The non-parametric one-tailed Mann-Whitney U test (p = .05) was used to determine level of statistical significance for any score differences noted between the two cab/stance types.

RESULTS: Mean overall REBA scores for the two cab design/stance groups, Group A (DS) and Group B (US) were $\mu A = 6.38$, $\mu B = 4.93$. Mean body segment domain scores obtained were; neck $\mu A = 2.42$, $\mu B = 1.87$, trunk $\mu A = 2.2$, $\mu B = 1.6$, upper arm $\mu A = 1.79$, $\mu B = 1.73$, lower arm $\mu A = 1.3$, $\mu B = 1.47$, and wrist $\mu A = 1.92$, $\mu B = 1.67$. Group A (DS) had statistically significantly higher scores for overall REBA score (p =.006, z = 2.51, UA = 92.5), neck score (p =.029, z = 1.89, UA = 114), and trunk score (p =.016, z = 2.14, UA = 105.5) compared to Group B (US). No statistically significant differences were found between the two groups for the upper arm, lower arm or wrist domains.

CONCLUSION: The results of this study suggest that operators using the DS cab design are at greater risk for developing WMSDs in the neck and trunk regions than those using the US cab design. This is likely due to the sustained rotated neck and trunk postures that are required to operate the DS cab design. Further investigation is necessary to determine what constitutes optimal forklift cab design and to develop appropriate interventions to decrease risk of WMSDs in operators.

HSR10

The risk of gastric cancer in patients diagnosed with certain other primary neoplasms, using the SEER 9 registry

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INTRODUCTION: Recent estimates of gastric cancer incidence in the United States reveal that 21,320 patients will be diagnosed in the year 20121. Of these individuals, approximately 10,540 patients are expected to succumb to the disease1. Epidemiological studies have shown that on average, six months pass between first symptoms of gastric cancer and diagnosis2. By minimizing this detection delay, earlier screening and diagnosis may lead to better prognosis at an earlier stage of the disease.

METHODS: Using the National Cancer Institute's Surveillance, Epidemiology, and End Results 9 registry database 1973-1999 (SEER), we assessed incidence of gastric cancer in patients who were diagnosed with previous malignancies in the oral cavity and pharynx, colon and rectum, respiratory system, breast, prostate, urinary bladder, kidney and renal pelvis, or the brain. We then determined Standardized Incident Ratios (SIR) by comparing the results to the incidence of gastric cancer in the general population. SIRs were evaluated across race, gender, and age at diagnosis of the original neoplasm.

RESULTS: A total of 5,434 patients were diagnosed with gastric neoplasm subsequent to a previously diagnosed cancer. The SIR for respiratory system and brain cancers were highest with values of 1.48 and 1.44 respectively, indicating that these were the highest risk primary neoplasms for developing gastric cancer. Also at higher risk of developing gastric neoplasm were patients who were non-white or who developed their first cancer at a younger age.

CONCLUSION: Our analysis revealed a higher risk of gastric cancer in patients diagnosed with certain other primary neoplasms. These patients may benefit from more aggressive screening measures than those normally used for the general population.

HSR11

Autism Spectrum Disorder (ASD) and immunizations: College students' beliefs

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INTRODUCTION: The purpose of this study is to identify the depth of knowledge among a college-age population regarding the link between ASD and immunizations. Vaccinations have been one of the most innovative and life advancing medical discovery known to man. Since the introduction of vaccinations, illnesses once leading to massive morbidity and mortality are almost eradicated. Dr. Andrew Wakefield published an article stating a significant link between vaccinations leading to ASD. Since, the article has been proven untrue, never being based on true medical literature but rather false accusations.

METHODS: This volunteer study recruited college students to complete a survey on Seton Hall University campus. The population that included both undergraduate and graduate students, encompassing both science, and non-science majors, and both male and female genders. A paper survey was distributed and took less than 5 minutes to complete and was composed of 13 questions. The questions on the survey aimed to determine the general knowledge regarding vaccines, their personal experience with ASD, if they believe a link exists between ASD and vaccinations, and if this will affect their decision to vaccinate themselves and/or their children in the future. Analysis of the data was performed using SPSS 23.0; descriptive statistics with frequency counts were applied using chi squared test.

RESULTS: Of the 201 students surveyed, 184 met the inclusion criteria. Of the total student population, with a p value of .155, 23.4% believed there was a link between ASD and vaccinations, 73.9% believed there was no link and 2.7% were unsure. The survey also divided the student population by major, a total of 103 non-science, 81 science. Of the science majors surveyed, with a p value of .694, 24.7% believed there was a link between autism and vaccinations, 71.6% believed there was no link, and 3.7% were unsure of a link. In comparison with non-science majors, with a p value .694, 22.3% believed there was a link, 75.7% believed there was no link, and 1.9% was unsure of a link. The final question on the survey inquired if the student plans on vaccinating their future children, with a p value of .599, 89.1% will vaccinate, 10.9% will not, and 0% are unsure.

CONCLUSION: The results of the study suggest that college students do not believe there is a relationship between vaccinations and Autism Spectrum Disorder. However, 23.4% of the general population believes that a link exists. Such results indicate that although the majority of students believe there is no link, it remains necessary for health care providers to adequately educate patients on the importance of vaccinations. This can be achieved through open communication at the time of vaccination, entry into school, and counseling parents on the importance of adhering to vaccination schedules. Future research might explore whether the link between ASD and vaccinations is based on childhood vaccinations or annual vaccinations such as influenza.

HSR12

Code switching between Filipino and English languages in children younger than 5 years

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INTRODUCTION: Given the growing number of Filipino Americans raising their children bilingually, it is important to understand the normal course of bilingual language acquisition for Tagalog-English speaking children, with code switching being an understudied area. The purpose of this study is to describe code switching patterns in longitudinally collected language samples of six normally developing bilingual Filipino-English children to better describe the developmental trajectory of code-switching. This research collaboration between Seton Hall University, South Orange, NJ and the University of the Philippines, Manila, utilizes language samples collected longitudinally in young children reared in Filipino-English speaking environments within the Philippines.

METHODS: Participants included 6 children reared in bilingual Filipino-English homes within the Philippines. Seventy-Eight Language samples obtained from participants over time from birth to five years were analyzed. Language samples were coded for instances of code-switching. A coding system developed for this study was used to identify and describe instances of code switching. The coding system required that syntax determine the base language and consequently, the non-base language they are switching into. Instances of code-switching were described in terms of linguistic form, content, and use. Linguistic form included phonological, morphological, and syntactic analyses. Content included semantic analyses and use included pragmatic (or form) analyses.

RESULTS: Data analysis is currently underway; however, early results indicate clear patterns for instances of code-switching. Namely, inter-sentential and intra-sentential patterns for instances of code-switching emerged, with an increase in the frequency of occurrence with age.

CONCLUSION: Findings from this study provide insights into normal bilingual language development for Tagalog-English speaking children reared in the Philippines. Clinical application for the bilingual, working with young children in both the U.S. and Philippines will be provided.

HSR13

Knowledge and appropriate use of antibiotics in college aged students

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INTRODUCTION: Antibiotic resistance is a growing problem that has an effect on several aspects of medicine, including the health and well being of patients and the cost-effectiveness of healthcare as a whole. Factors that influence antibiotic resistance include over-prescribing, inappropriate use, limited education or instruction pertaining to use, and diagnostic uncertainty. An over prescription of antibiotics has caused an increase in antibiotic resistance and the emergence of super bugs, which could lead to major problems in the future. The purpose of this study is to serve as an assessment of the knowledge of proper antibiotic use among college students, and to determine whether this knowledge has an influence over appropriate antibiotic use.

METHODS: Students from Seton Hall University were asked to participate in our study by taking a paper

based survey entitled "Knowledge of Appropriate Use of Antibiotics among College students." In the survey we asked questions regarding demographics, knowledge of antibiotics and behaviors regarding taking antibiotics. Both Undergraduate and Graduate students above the age of 18, excluding PA students, were asked to take our survey. Overall we were able to obtain 140 surveys. SPSS statistical software was then used to analyze the date. Participants who answered 4 or more questions in each section correctly were considered to have appropriate knowledge/proper antibiotic use, and participants who answered 3 or less were considered to have inappropriate knowledge/ improper use.

RESULTS: Using the collected data we compared antibiotic knowledge to behavior and found that participants who had adequate knowledge also had more appropriate behaviors. There was a total of 140 participants included in this study. 47.9% were female and 52.1% were male with ages ranging from 18 to 21. 42.9% were science majors and 57.1% were non-science majors. After collecting and analyzing the date for each response we found that in the section assessing knowledge participants answered the most poorly to the question "Should you take antibiotics for a viral infection?" 58.6% incorrectly answered yes. In the section assessing behavior we found that the most commonly incorrectly answered question was, "Have you ever stopped taking an antibiotics before the dose was completed because your symptoms improved." 58.6% inappropriately answered yes. Of the the total participants, we found that 102 had adequate knowledge and of those, 87.2% also had appropriate behavior. Of the total participants, 38 people had inadequate knowledge and 47% of those people also had inappropriate behavior.

CONCLUSION: From our results it was concluded that a higher knowledge of antibiotics led to more appropriate use. However we found that inadequate knowledge does not necessarily correlate with inappropriate antibiotic use. Clinicians can use these results to prove that knowledge of antibiotics is important and that they should educate their patients on appropriate antibiotic use. Our results suggest that improving patient education may decrease the misuse of antibiotics and decrease both antibiotic resistance and the creation of super bugs.

HSR14

Accuracy of bioelectrical impedance device measures of body composition as compared to skinfolds

Thatcher-Stevens, A. (student); Cray, J.; Andujar, C.; Gasik, K.; Rizzolo, D.; Hill-Lombardi, V.J. Seton Hall University - Health Sciences Graduate Program

INTRODUCTION: There are multiple bioelectrical impedance analysis (BIA) devices available for the measurement of body composition. It is unclear as to which device is the most accurate, or if there is a gender bias. The purpose of this study is to determine which BIA device is the most accurate at assessing body composition for males and/or females as compared to skinfolds.

METHODS: Repeated measures design, conducted in a controlled laboratory setting. 26 university students were measured (15 males, 11 females); mean age 24 years (± 2); mean BMI 27.46 (± 4.79); mean specific gravity 1.017 (± 0.006). IV - body composition instrument, four levels: Tanita BF-3011 (foot-to-foot), Omron HBf-306 (hand-to-hand), BodyStat 1500 (full-body), compared against Lange skinfold calipers (3 site). DV-measurements of body composition. BIA device determined body fat percentage. Body fat percentage was calculated from the skinfolds using the Jackson and Pollock generalized equations for predicting body density of men and women. Statistical analysis included correlations and paired t-tests. Significance set at $p<0.05$. All analyses were run using SPSS v22.

RESULTS: Strong correlations were found in males between control and Omron ($r=0.853$) and control and BodyStat ($r=0.845$). A moderate correlation was found between skinfolds and Tanita ($r=0.787$). In females, there were no strong correlations. A moderate correlation was found between control and Omron ($r=0.712$). Significant differences in paired t-tests were found in males between skinfolds and Omron ($p<0.001$), skinfolds and Tanita ($p=0.002$), and skinfolds and BodyStat ($p<0.001$). A significant difference was found in females between skinfolds and Omron ($p=0.006$).

CONCLUSION: In males, all three BIA devices were significantly different than skinfolds However, the strong-moderate direct correlations suggest that while not accurate, they are consistent. In females, the Omron had the only significant difference compared to skinfolds, suggesting inaccurate body composition measurements. The Tanita and BodyStat while accurate in females, they were not consistent. Gender differences can potentially be attributed to body fat distribution, subcutaneous vs. visceral fat, total body water, and skinfold variance. Further research should be done looking at device accuracy in males, particu-

larly with the Tanita since it is used almost exclusively in male bodyweight sports, and consistency of devices should be further investigated in females.

HSR15

Effects of pulmonary rehabilitation on health outcomes and hospital visits for chronic obstructive pulmonary disease (COPD) exacerbations

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INTRODUCTION: Chronic obstructive pulmonary disease is a life-threatening, debilitating lung disease that affects over 24 million Americans and accounts for over 3 million deaths worldwide per year. Current treatment and management guidelines have resulted in many patients experiencing frequent COPD exacerbations despite maximal pharmacologic therapy, which require multiple costly ER visits and hospital admissions. Although pulmonary rehabilitation has been shown to improve quality of life and decrease healthcare utilization, there are few studies that have been done to show its efficacy and significance. Therefore the purpose of this study is to determine if there is an improvement in patient symptoms after a pulmonary rehabilitation program as well as examine inpatient and ER COPD readmission rates.

METHODS: 114 charts of subjects enrolled in a 36-week session of pulmonary rehabilitation were reviewed. Data used from the pulmonary rehab facility was tracked on a "Pulmonary Rehab Outcomes" form and included data before starting the program and after ending the program of the following variables: "Six Minute Walk Test", "Dartmouth Quality of Life", and "Minutes of physical activity during supervised sessions." The quantity of ER visits and admissions for COPD exacerbations after the program were also collected for these patients. Additionally, information on whether the subjects continued a maintenance program was collected. Analysis consisted of descriptive statistics along with a T-test using SPSS Version 23. P value was < 0.05.

RESULTS: A paired sample t-test found the following: the pre-rehab 6 minute walk test score was M=994.24, SD=282.86, and post-rehab value was M=1153.91, SD=329.06; $t = -8.76$, $p < 0.001$. In addition, the pre-rehab for Dartmouth quality of life score was (M= 23.57, SD= 5.37), and post rehab value was (M= 19.46, SD=4.92); $t = 10.35$, $p<0.001$. The observed time spent performing a physical activity was also calculated with a pre-rehab score of (M= 20.23, SD = 8.36), and post-rehab value of (M= 42.74, SD= 7.53); t= -23.11, p< 0.001. 6% of the patients enrolled in the program were readmitted after 3 months of therapy. In addition, 7%, 10%, 15%, 26%, and 35% of patients in the program were readmitted to the hospital within 6, 9, 12, 24, and 36 months respectively. 4% of patients were seen at the ER at 3 months, 6% at 6 months, 11% at 9 months, 15% at 12 months, 24% at 24 months, and 39% at 36 months. 23 patients continued with a maintenance rehab program after 36 sessions. One patient on maintenance therapy had a readmission after 24 months following the 36 session program.

CONCLUSION: The results suggest that the pulmonary rehab program for COPD patients has a positive effect on exercise performance, quality of life, and the reduction of ER visits and hospital admissions. Our research suggests that when COPD patients complete a pulmonary rehabilitation program, there is a decrease in admission rates and ER visits along with an improved quality of life with even better improvements when a patient enrolls in a maintenance program. Although lung function is unable to return to baseline in COPD patients, it is clear pulmonary rehabilitation has a role in improving a patient's overall quality of life by stabilizing their lung function and thereby reducing COPD exacerbations and hospital admissions. 35% decreased in readmission rates found when compared to national data.

HSR16

Knowledge and perception of human papilloma virus among college aged students

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INTRODUCTION: Human Papillomavirus (HPV) is the most common sexually transmitted infection in the United States with nearly all sexually active people acquiring it at some point in their lifetime. Despite being at high-risk for sexually transmitted infections, research has shown that many college-aged students do not believe they will contract HPV. Additionally, while most recent guidelines urge both sexes to receive the vaccine, vaccine uptake is still higher among women as compared to men. The purpose of this study is to gain insight into the knowledge and perceptions of HPV among college aged students and make recommendations for both college students and patient educators.

METHODS: All students on a small private campus, between the ages of 18 and 24 were surveyed on campus via convenience sampling. Surveys were adapted from the Knowledge and Perceptions Survey (KAPS), initially created by McPartland and then modified by

Lopez, which assessed the applicant's demographic information and knowledge of HPV. Frequencies and percentages were calculated using SPSS. Statistical significance was determined utilizing chi-square analysis and a $P < 0.05$ and CI 95%.

RESULTS: Of the 222 students who took surveys, 150 were included in the study and 72 were excluded due to incomplete or inaccurate responses or age older than 24. Seventy-five percent (75%) of students who took the survey were between the ages of 18 and 19 years old. Nearly one fifth (18.7%) of participants had never heard of HPV and for those who were aware of the STI, around one half (47.3%) rated their knowledge of HPV as "poor". The majority of students were aware that HPV can cause cervical cancer (79.3%), but less than half (46.7%) knew that HPV is also associated with oral cancers. Only 30.7% of participants knew that HPV was the cause of genital warts. However, many participants knew that HPV could be transmitted when asymptomatic (88%), that pap smears can indicate changes consistent with HPV (80.7%), and that a vaccine exists to prevent infection (76%).

CONCLUSION: The results of this study show the importance of continued education of college-aged students on the HPV infection. There still remains shortcomings in HPV knowledge among both males and females of college-age specifically with oral HPV. Continued HPV education is of utmost importance to minimize the spread of HPV infection and ultimately to prevent the development of cervical and oral cancers.

Research in Progress

IP01

Use of apneic oxygenation in the emergency department to decrease desaturation during rapid sequence intubation

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INTRODUCTION: Apneic oxygenation has been used in anesthesia for many years to prevent desaturation during intubation. There is an abundance of literature to support this practice during elective intubation in the operating room, and many emergency physicians have adopted this practice in their own emergent airway management. Although there is not yet robust evidence to use this practice in an emergent setting, this is becoming standard of care in some emergency departments. We hypothesize that this practice will prevent desaturation in the apneic period during rapid sequence intubation of patients presenting to the emergency department.

METHODS: Our study is an ongoing randomized controlled trial of prospectively enrolled patients requiring emergent rapid sequence intubation comparing apneic oxygenation to usual care. Our setting is a community emergency department that sees 115,000 patients a year. This hospital has a new three-year emergency residency program, and apneic oxygenation was not the standard practice. The two arms of the study are usual care at the discretion of treating physician without apneic oxygenation and usual care plus apneic oxygenation. Patients are enrolled 24 hours a day and are randomized based on calendar day of intubation. Data collection consists of a post-intubation form filled out by the treatment team.

RESULTS: We present here our first 34 patients. An interim statistical analysis is planned after the first 80 patients. Preliminary shows lower saturations and increased number of desaturations in the standard care group.

	Standard	AO
n	16	18
Desat (5-10%)	3	1
Desat (>10%)	6	0
Desat (>=5%)	9	1
% Minor Desat (5-10%)	18.8%	5.6%
% Major Desat (>10%)	37.5%	0.0%
% Desat (>=5%)	56.3%	5.6%

CONCLUSION: Apneic oxygenation could be a cost-effective, noninvasive way to maintain oxygenation saturation during the apneic period in emergent intubations; this study is the first that attempts to measure the effectiveness of this intervention in the emergency department. This study has several limitations. The nature of emergent airway management made it impossible to blind the intubator to the treatment arm. In order to maximize enrollment and diversity of intubators, many different individuals do data collection.

IP02

The effects of auditory stimulation on postural sway and muscle activity in healthy adults: A methodology study

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INTRODUCTION: Balance require an integration of feedback from vision, mechano-receptors and the vestibular and neuromuscular system. Research indicate that sound may also affect balance as disturbances of standing balance has been found among subjects exposed to high frequency noise, listening to music and when exposed to moving auditory stimuli. There is however no clear understanding of the mechanism involved in how sound levels, type, location and stability affect the balance system. The present class project examine the methodology to be used in a study investigating auditory stimulation's effect on balance. This project allow group members practice scientific research methodology and may assist in enhancing methodology of future studies investigating sound's effect on balance.

METHODS: Design: Quasi-experimental within-subject repeated measures. Subjects: Group members, classmates, N=6. Statistics: Repeated Measure ANOVA. Instrumentation: Bertec force platform, Delsys surface EMG, Apple Ipod for a 2000Hz sound delivery. Procedure: Surface EMG of gluteus medius, adductor magnus, gastrocnemius and tibialis anterior. Test position: Single leg stance (SLS) on dominant leg using headset with an Apple Ipod. Three test conditions performed five times in random order while assuming SLS: (1) No sound. (2) Steady sound, (3) Random sound 5 times with 2 seconds duration. Independent variables: Auditory Stimulation (silence, steady or random). Dependent variables: Mean peak normalized EMG (%MVC), CoP lateral displacement (mm) and CoP anterior-posterior excursion (mm).

RESULTS: Data has yet to be collected therefore no results can be reported. By using surface EMG, it will allow us to obtain data from the target muscles regarding the amount of muscle activity during the balance

task. The data will be used to determine if there is a difference in muscle activity with and without auditory stimulation. Also, the use of a force plate allows for the collection of CoP displacement with CoP recognized as a valid representation of postural sway. This class project will allow us practice in scientific data collection and has the potential to identify methodological weaknesses assisting in enhancing methodology of future studies examining sound's effect on balance.

CONCLUSION: Conclusion are yet to be drawn as this project is in progress.

IP03

The role of dietary intake and physical activity on arterial waveform characteristics

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INTRODUCTION: Cardiovascular disease is associated with systemic arterial stiffening and concomitant hemodynamic changes. The compliance of small, medium, and large arterial vessels cannot be directly measured, but may be derived from photoplethysmography (PPG). This non-invasive technique uses infrared light to examine and measure digital hemodynamics (pulse pressure) to indirectly measure large artery stiffness from measurements taken from the capillary bed of a finger. Large artery stiffness has been associated with an increased risk for cardiovascular disease and incident cardiac events. Although PPG has been demonstrated as a simple, reproducible, and non-invasive measure of large artery stiffness, this technique only provides a snapshot in time of the status of the cardiovascular system.

METHODS: In an effort to enhance the diagnostic, prognostic and potential utility of a commercially-available arterial waveform analyzer as a clinical tool, a prospective, cross-sectional investigation will be performed in men and women between the ages of 18 and 59, who are otherwise healthy. PPG determination of the arterial waveform will be assessed in the supine, seated, and standing positions and while walking (3.1 mph) at a steady-state speed. Characteristics of the arterial waveform will be made and compared to demographic (age, ht, wt, BMI, waist circ) information and that obtained from a 24 hour diet journal (i.e., calories, salt, caffeine) and activity level monitoring (i.e., caloric expenditure, steps, distance traveled).

RESULTS: The contributions of independent variables to PPG-derived characterizations of the arterial waveform will be performed using appropriate statistical modeling. All data will be reported as appropriate group mean and standard deviation.

CONCLUSION: It is anticipated that dietary and activity-based factors will place a substantial role in the respective latency and amplitude of arterial waveform characteristics, especially those segments with known associations and prediction to incident cardiac events and cardiovascular morbidity.

IP04

Knowledge, attitudes, and behaviors of pediatric physical therapists who treat young children who are not yet crawling independently on the use of tummy time at home

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INTRODUCTION: The purpose of this study is to identify the knowledge and behaviors of pediatric therapists on the use of tummy time at home. The Delphi technique was used as the research design for the study because based on a literature review there were gaps in understanding. The panel of experts for the study are physical and occupational pediatric therapists. A series of uniquely created questionnaires will be sent to the members of the panel containing broad questions, posed quantitatively and qualitatively. We hope to receive ten completed surveys back to evaluate for wording and content. Our aim is to understand common practice in the area of tummy time promotion. Further research must be conducted to continue to validate the questionnaire and standardize pediatric therapy involving tummy time.

METHODS: Our questionnaires have been compiled for review and editing answering the following research questions: What do therapists know about the use of tummy time and its effects on motor development in young children who are not yet crawling or moving into sitting by themselves?, What do therapists perceive as the value of tummy time at home to promote motor development and barriers and motivators to use tummy time at home?, What methods do therapists use to educate parents about the use of tummy time at home?, How do therapists assess the effect of parent compliance in the use of tummy time at home?

RESULTS: N/A as of late

CONCLUSION: N/A as of late

IP05

Evaluation of a novel wireless transmission system for trauma ultrasound examinations from moving ambulances

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INTRODUCTION: This paper describes and reports results for the third phase in development and investigation of a novel wireless transmission system for securely conveying medical ultrasound examinations from moving vehicles or remote locations to physicians for interpretation as the examinations are being performed. Phase one of the project was a feasibility demonstration with images sent from a moving ambulance. Phase two of the project involved sending images from a remote island medical clinic. In all three phases, wirelessly transmitted images were compared to images obtained after arrival without transmission. Comparison was made by physicians trained in ultrasound interpretation. They compared recordings of both the transmitted and bedside performed examinations.

METHODS: Patients were victims of blunt trauma evaluated by Emergency Medical Technicians specifically trained in performing medical ultrasound (eFAST) examinations for this study. They rode in the ambulance as extra crew members in a research role and performed the examinations on a non-interfering basis so as not to affect patient care or transport time. One researcher was on duty at a time for approximately 8 hours a day for four days per week, during the day on weekdays. Recorded data of both the transmitted and bedside eFAST examinations were blindly evaluated from June 2014 to August, 2015. The raters were all trained in the eFAST exam. Fourteen of the 20 raters (70%) were in emergency medicine, 3 (15%) were in radiology, and 3 (15%) were in surgery. Upon patient arrival at the hospital a bedside eFAST examination was performed by a physician in the traditional manner. Both this examination and the examination performed in the moving ambulance were recorded and later reviewed by physicians trained in ultrasound interpretation. The reviewers utilized the QUIS (Questionnaire for User Interaction Satisfaction) assessment tool and results were statistically analyzed. Data was obtained from 20 evaluators who rated ultrasound images from two different conditions, ambulatory (Series A) and base (Series B). Each evaluator completed ratings for images from 20 subjects. The images were evaluated on 11 scales that were grouped into subsets of Overall Reactions (4 items), Screen Factors (3 items), and Multimedia Factors (4 items).

RESULTS: We reported descriptive statistics as means (standard deviations), provide coefficient alpha for the QUIS rating scales and raters, and compared the ratings for ambulatory and base images on all scales using paired samples t-tests Mean Std Comparison Difference Deviation t p-value Total -.11464 .68043 -.753 .460

CONCLUSION: Although there is a slight tendency for the average rating across all subjects and raters to be slightly higher in the base than in the ambulatory condition, none of these differences are statistically significant. These results suggest that the quality of the ambulatory images were viewed as essentially as good as the quality of the base images. The ability to transmit medical ultrasound images from a mobile or fixed remote location for interpretation by an expert physician at a receiving hospital can be useful in improving medical care. Applications include civilian trauma victims, battlefield injuries, and underserved remote populations. Continuing research is being considered for medical helicopter and fixed wing aircraft.

IP06

Effects of glenohumeral taping in women presenting with shoulder pain due to infraspinatus trigger point activity

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INTRODUCTION: Adult women experience high levels of shoulder pain that can effect their ability for community participation, including school, work, job, and leisure activities. There is currently limited research pertaining to the effects of McConnell Taping (MT) on shoulder pain and reduction of trigger point activity (TPA). One of the aims of this study is to add to the body of research pertaining to MT. Additionally, the majority of the current MT research pertains to the patellofemoral taping techniques and reduction in knee pain. This study aims to expand the current research to include the use of MT for shoulder pain and infraspinatus TPA. To date, the majority of current research on taping, shoulder pain, and TPA utilizes kinesio taping as their primary correction method

METHODS: A single female subject with TPA voluteered for the vignette. Palpation will be conducted to the infraspinatus (ISP) muscle to locate and elicit TPA. Next a Wagner® force gauge (WaG) will be used on TPA and the measured PSI will be recorded. A modified

taping technique was utilized to target the ISP muscle via 2" Leukotape P® applied above Cover-Roll® stretch tape. The tape was anchored at the origin and insertion of the ISP, coursing around the lateral portion of the glenohumeral joint, along the path of the muscle. The examiner marked above and below the previously marked area of TPA for retest purposes. Within 2 minutes application of the tape, the Wagner pressure gauge was used to elicit TPA, and the PSI will be recorded.

DISCUSSION: (Pending completion of data collection and case write-up.)

IP07

Multicenter evaluation of the impact of weight estimations on anticoagulation reversal with 4-factor prothrombin complex concentrate (4F-PCC) in the emergency department

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INTRODUCTION: Multiple studies have evaluated various doses of PCCs in an attempt to find the most ideal dosing strategy to achieve successful anticoagulation reversal. Currently, the FDA labeled dosing is based off of the initial INR and the patient's actual body weight. In healthy volunteers, PCCs has shown complete reversal of rivaroxaban, however, had no effect on the anticoagulant effects of dabigatran. Due to apixaban's similar mechanism of action to rivaroxaban, PCCs may also be used in these patients with life-threatening bleeding. The purpose of this study is to assess if weight estimations in the emergency department impact successful anticoagulation reversal.

METHODS: This multicenter, retrospective chart review will assess any patient 18 years of age or older who received 4-factor PCCs in the emergency department of five teaching hospitals for reversal of warfarin or other anticoagulants from January 2013 to August 2015. Patients will be included if they have a recorded initial INR and an indication for anticoagulation reversal with PCCs. Any patient who expires within 60 minutes of administration will be excluded. Subsequent INR, time to INR, use of additional blood products, actual weight, estimated weight, actual dose, and calculated dose will all be collected. Outcomes such as thrombotic event within 7 and 30 days, in-hospital mortality, percent of product labeled dose given, and average weight difference will be analyzed.

RESULTS: Study in progress. Results will be finalized by April.

CONCLUSION: We hypothesize that weight estimations in the ED may affect successful anticoagulation reversal with PCCs.

AUTHOR INDEX BY ABSTRACT